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United States
Department
of Agriculture

Forest Service
Intermountain Region

Payette National Forest

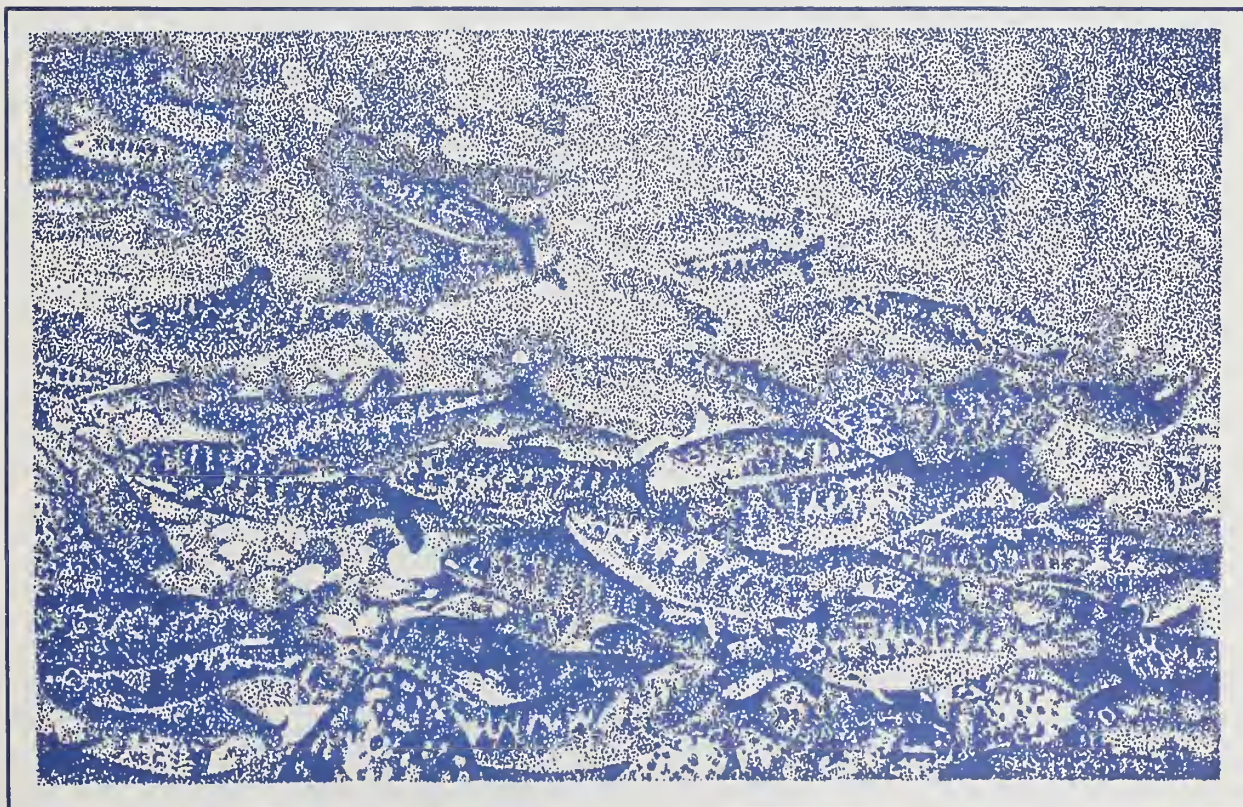


South Fork Salmon River Road Project

08 OCT 1990



Final Environmental Impact Statement



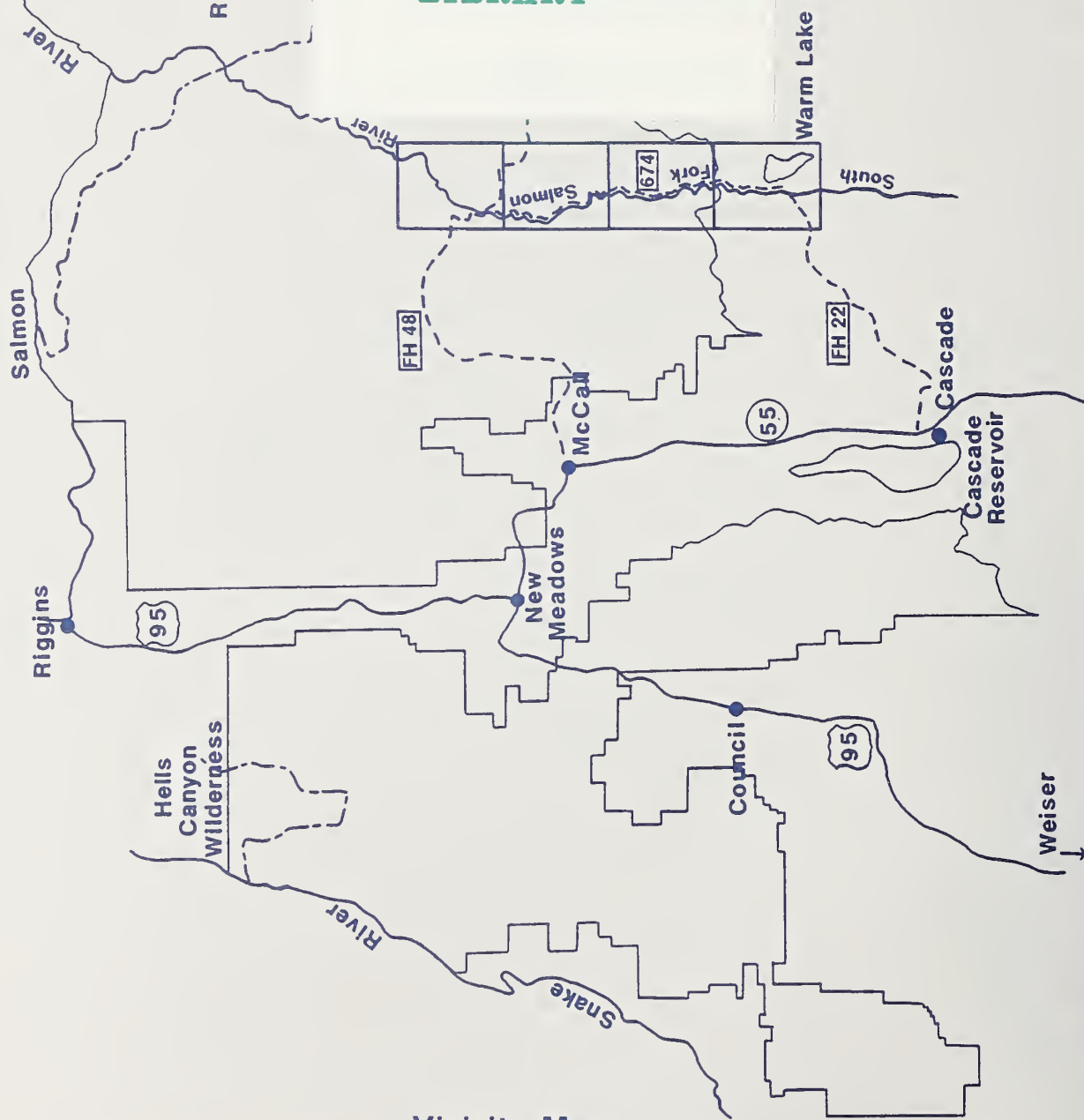
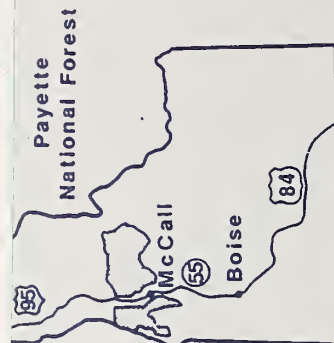
A map of the Boise & Payette National Forests. The map shows the Salmon River flowing from the top left towards the center. A dashed line represents the Frank Church River of No Return Wilderness. Another dashed line represents the Hells Canyon Wilderness. The town of Riggins is marked with a blue dot on the Salmon River. A road labeled 95 is shown near Riggins. The title "BOISE & PAYETTE NATIONAL FORESTS" is written vertically on the left side of the map.

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Vicinity Map

FINAL ENVIRONMENTAL IMPACT STATEMENT

South Fork Salmon River Road Project

Valley County, Idaho

Lead Agency:

USDA Forest Service

Responsible Officials:

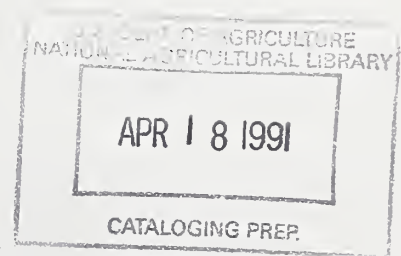
Veto J. LaSalle
Forest Supervisor
Payette National Forest

Dave Rittersbacher
Forest Supervisor
Boise National Forest

For Further Information, Contact:

John Hooper
Project Leader
South Fork Road Project
Payette National Forest
106 West Park Street
P. O. Box 1026
McCall, ID 83638
(208) 634-1469

Abstract: This Final Environmental Impact Statement documents the analysis of seven alternatives that were developed for possible management of the South Fork Salmon River Road. The seven alternatives included: Forest Plan-No Action (implementing the management direction for the road stated in the Payette and Boise National Forest Plans); No Action (maintaining the road in its present condition); Existing Road-Gravel Surface (gravel surfacing the road in its present location); Existing Road-Asphalt Surface (asphalt surfacing the road in its present location); Relocation-Gravel (relocating 4.0 miles of the road and gravel surfacing the road); Relocation-Asphalt (relocating 4.0 miles of the road and asphalt surfacing the road); Relocation-Asphalt and Gravel (relocating 4.0 miles of the road and using a combination of asphalt and gravel surfacing on the road). Three winter road management options were considered as part of the alternatives. The preferred alternative is Relocation-Asphalt, with winter road access allowed seven days per week.







Overview

The South Fork Salmon River Drainage

The South Fork of the Salmon River drains approximately 827,000 acres of central Idaho, an area slightly larger than the State of Rhode Island.

The rugged South Fork drainage ranges in elevation from 2,700 to 9,280 feet. The area contains an extraordinary diversity of natural resources, including valuable minerals and timber, wilderness and roadless

areas, and abundant fish and wildlife.

More than 200 species of birds occur within the drainage. Large mammals include Rocky Mountain elk, mule and white-tailed deer, black bear, cougar, mountain goat, bighorn sheep, and probably the Northern Rocky Mountain gray wolf.

Overview/Summary

The cool, clear waters of the South Fork and its tributaries support resident trout and char and nationally significant populations of anadromous salmon and steelhead.

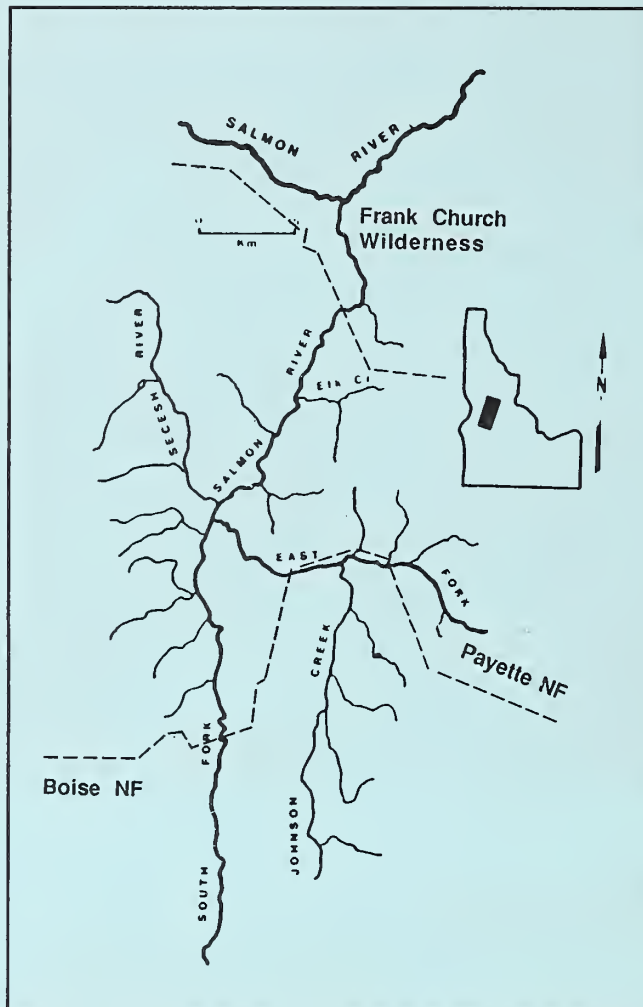
The drainage contains critical natural habitat for summer chinook salmon. Summer chinook once were the largest, most valuable run of salmon produced in the 260,000 square-mile Columbia River Basin. Now these fish are being reviewed for possible listing as a threatened or endangered species under the Endangered Species Act.

Land Use & Resource Impacts

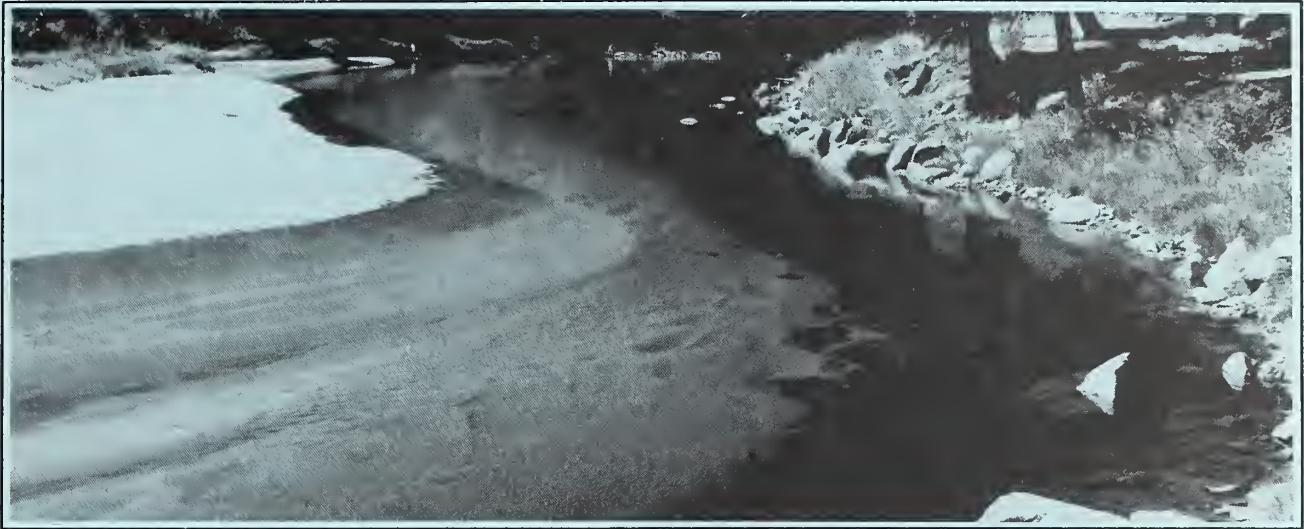
Virtually the entire South Fork drainage lies within a geological formation known as the Idaho Batholith. This granitic intrusion covers a large area of central Idaho and western Montana. It is characterized by shallow, coarse-textured soils which are highly susceptible to erosion when disturbed.

Prior to the mid 1940s, extensive livestock grazing, and dredge, placer and hydraulic mining occurred in the South Fork drainage. More than 350 miles of road were built. These activities occurred with little consideration of the high erosion hazard, and generated large amounts of sediment in the South Fork Salmon River and its tributaries.

From the mid 1940s to the mid 1960s, approximately 320 million board feet of timber were cut in the drainage. An additional 800 miles of road



About two-thirds of the South Fork Salmon River drainage lies within the Payette National Forest, about one-third within the Boise National Forest. Approximately 66,000 acres are within the Frank Church River of No Return Wilderness. The South Fork Salmon and tributary Secesh River have been recommended for study for possible inclusion in the National Wild and Scenic River System.



Erosion deposited massive amounts of fine sediment in the South Fork and its tributaries. Fish spawning and rearing habitats were buried. Stream channels were choked with large deposits of sand.

were built, many across steep, fragile terrain.

Extraordinary rain-on-snow weather in 1964 and 1965 resulted in massive erosion of logged areas and roads. Prodigious amounts of sediment - estimated at up to 1.5 million cubic yards of material - washed into the South Fork and its tributaries. This had devastating impact on aquatic life, including anadromous salmon and steelhead which require clean, relatively sediment-free gravels in which to lay their eggs.

In 1965 the Forest Service declared a moratorium on logging and road construction in the drainage. By the mid-1970s, 500 miles of logging roads had been closed and revegetated and other erosion control measures implemented. These activities and natural stream flushing action significantly reduced the amount of sediment in the South Fork and tributaries.

In 1977 timber harvest resumed under constraints to minimize erosion. Logging and other other land disturbing activities were conditioned upon continued improvement in anadromous fish habitat.

In 1983 a monitoring committee established by the Chief of the Forest Service concluded sedimentation had not decreased and fish habitat had not improved in the intervening six years. Timber sales were discontinued except for low risk sales.

Presently there is a moratorium on new land disturbing activities until monitoring demonstrates an improving trend in sediment reduction.

The Forest Service has invested several million dollars in erosion control and monitoring over the past two decades. Despite these investments and restrictive land use practices, in recent years sediment loads in streams have not shown a decreasing trend.

Apparently the amount of sediment already in the South Fork and tributaries, plus the new sediment being delivered, exceeds the drainage's ability to transport sediment out of the system. Even small amounts of additional sediment could, over time, add up to very large quantities of additional deposition in streambeds.

This situation jeopardizes achieving Forest, state, tribal, regional and national fish production objectives for the South Fork drainage.

...We do not expect the river to improve under existing conditions."

--South Fork Salmon River Monitoring Committee, 1987



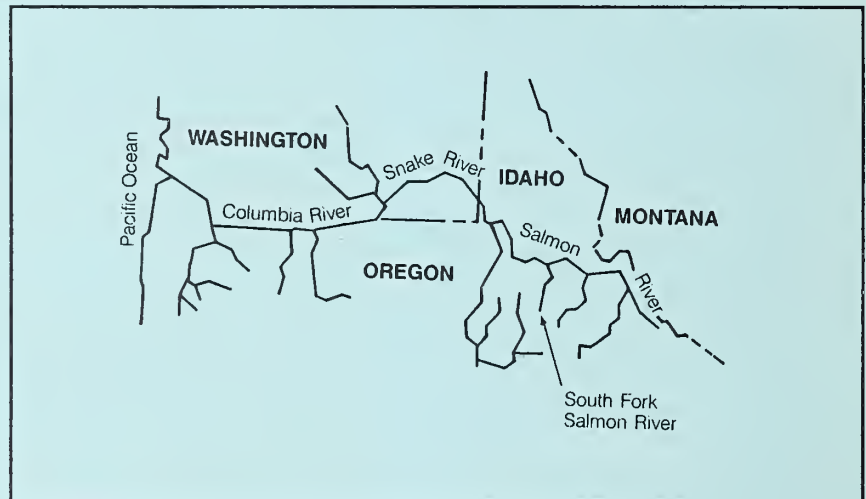
Salmon and steelhead have exacting requirements for spawning and rearing, including cool, clean water and clean gravels in which to lay their eggs. Excessive sediment can smother eggs and newly hatched fish.

Fish Habitat

Excessive sediment degrades habitat for all fish species in the drainage, including redband/rainbow trout, westslope cutthroat trout, bull trout (Dolly Varden), brook trout, anadromous steelhead and chinook salmon and nongame fish.

The South Fork historically produced tens of thousands of anadromous steelhead and salmon. South Fork fall chinook and sockeye are now extinct. Spring chinook are present only in remnant numbers. Summer chinook, historically the most abundant salmon in the drainage, have been reduced to a fraction of their former numbers.

The sharp decline in anadromous fish is the result of several complexly interrelated factors.



By far the most critical factor is eight federal hydroelectric dams on the main-stem Columbia and lower Snake Rivers. The majority of all juvenile salmon and steelhead produced in the South Fork drainage are killed attempting to migrate through the reservoirs and past the dams enroute to the Pacific Ocean.

In the past, South Fork salmon and steelhead also were subject to overfishing in marine and freshwater fisheries.

Within the drainage, the principal factor limiting fish production is erosion and resulting sedimentation of spawning and rearing areas.

The Forest Plans

The Boise and Payette Forest Land and Resource Management Plans designate the South Fork drainage as an area of special concern. Restoring the productivity of fish habitat is a primary objective of both plans.

The State of Idaho has listed the South Fork Salmon River as a "Water Quality Limited Segment" under provisions of the federal Clean Water Act. This requires the stream be protected from further degradation by sediment. The South Fork also is designated as a "Stream Segment of Concern" under the Act. This provides for special protection of beneficial uses. In this case, the most impaired beneficial use is habitat for summer chinook salmon.

The Forest Plans identified the South Fork Road as the largest remaining untreated source of human-caused sediment in the drainage.

Paving the South Fork Road to reduce sediment and maintain motorized access was considered in Forest Plan development. Because of the relatively high cost of paving, however, the final decision was to close approximately 16 miles of the road and convert it to a trail, to relocate and gravel 4 miles of the road, and to gravel the remaining 10 miles. This was considered to be the most cost-effective way to reduce sediment originating from the road. However, it would have reduced motorized access to the drainage for recreationists, Yellow Pine residents and mine operators and suppliers.



The South Fork Road is primarily decomposed native granite. This material is highly erodable. The road requires frequent, costly maintenance. Material eroded from the road bed, ditches and side slopes ends up in the South Fork Salmon River and tributaries.



Summary

South Fork Salmon River Road Project Final Environ- mental Impact Statement

In the fiscal year 1989 Appropriations Bill, the United States Congress provided \$8 million to the Forest Service to pave the South Fork Road, reduce sediment, and maintain motorized access.

Shortly after the Forest Service announced its Forest Plan decision to close portions of the road, Yellow Pine residents appealed. On December 22, 1988, a federal court enjoined the Forest Service from prohibiting snowplowing and vehicular travel pending reconstruction and paving of the road as directed by Congress.

The Regional Forester directed the Payette Forest Supervisor to re-evaluate Forest Plan direction for the South Fork Road in order to comply with the intent of the congressional appropriation and court ruling.

Preliminary issues for analysis were derived from Forest Plans, public comments on the Interim Road Management Decision, and the Notice of Intent to Prepare an Environmental Impact Statement. These issues were used to guide preparation of a Draft Environmental Impact Statement.

The South Fork Road is accessed off the Warm Lake Highway from Highway 50 out of the community of Cascade. It is one of three roads providing motorized access to the South Fork Salmon River drainage.

The Johnson Creek Road, also accessed from the Warm Lake Highway, and the Yellow Pine Road out of McCall, traditionally have been the primary routes to Yellow Pine and area mining operations.

The South Fork Road typically receives less snow than the other routes. When accessible off Warm Lake Highway, it becomes the preferred winter access route to Yellow Pine.

Heavy snowfall on major summits typically closes the Warm Lake Highway which provides access to both the South Fork and Yellow Pine Roads. During the past five years, Valley County periodically plowed the highway and portions of the South Fork Road. This provided dependable winter access to Yellow Pine residents for the first time since World War II when roads were plowed to access area mines.

Three winter access options were considered:

- Prohibit motorized, wheeled access January-March.

- Allow snow removal and permit travel two days per week January-March

- Allow snow removal and permit travel seven days per week January-March.

The Forest Service determined the preferred alternative to reduce sediment and comply with congressional and court direction was to reconstruct the South Fork Road, relocate several sections, pave the road with asphalt, allow snow removal, and permit travel seven days per week January-March.

Objectives & Guidelines

Two primary objectives were established for the South Fork Salmon River Road project:

- 1] Reduce long-term sediment delivery to the South Fork Salmon River and tributaries without causing significant short-term increases during project implementation.

- 2] Maintain motorized access on the South Fork Road.

An interdisciplinary team of resource specialists and members of the public was formed to guide development and evaluation of alternative ways to achieve project objectives. The IDT developed a large number and variety of constraints, road design features, road management and maintenance criteria, and mitigation measures.

Alternatives

The draft EIS analyzed a number of alternative ways to meet congressional and court direction while reducing sediment and minimizing adverse impacts on other resource values:

- Implement Forest Plan direction to close portions of the road and gravel the remainder.

- Reconstruct the road with a number of bypasses and asphalt the surface.

- Moderately upgrade the existing road, relocate several sections, surface with gravel.

- Moderately upgrade the existing road, relocate several sections, surface with asphalt in areas of greatest erosion hazard, gravel the remainder.

Response to Issues & Comments

The draft EIS was distributed for review in November 1989. Forty-six comments were received. In response, the Forest Service modified the Final Environmental Impact Statement in the following substantive ways:

- **Water quality.** To ensure against short-term degradation of water quality during construction, measures were added to remove existing sediment from streams in amounts equal to or greater than amounts anticipated to be added during construction. Additional techniques were adopted to reduce sediment production during construction.

Overview/Summary

- **Winter access effects on wildlife.** Additional mitigating measures to minimize potential disturbance of wintering big game animals were added.

- **Endangered species.** U.S. Fish & Wildlife Service mandatory and discretionary measures to ensure against jeopardizing recovery of the endangered gray wolf were added.

- **Additional Alternatives.** Three additional alternatives were analyzed in detail: (1) take no action, maintain the status quo; (2) surface the existing road with asphalt with no bypasses; (3) surface the existing road with gravel with no bypasses.

- **Sediment analysis.** A new, state-of-the-art model was developed and used to provide a more accurate analysis of sediment projected to result from each alternative.

- **Cumulative effects analysis.** The analysis of the cumulative effects of road reconstruction in combination with other activities in the drainage was expanded and improved.

- **Toxic spill hazard.** More stringent restrictions were added to control transport of materials that could be toxic to fish in event of accidental spill.

- **Commercial use.** More stringent restrictions on commercial use of the road were added to reduce the risk of accidents and toxic spills.

Preferred Alternative

The preferred alternative in the draft environmental impact statement was modified to respond to public comments and additional technical analyses. Major elements of the preferred alternative are:

- The Warm Lake-Johnson Creek Road would be designated as the primary access route to Yellow Pine, private land, and mining operations.

- Approximately 4 miles of the existing South Fork Road would be relocated back to its original alignment and converted to a trail restricted to foot traffic and nonmotorized bicycles.

- The resulting road would be surfaced with asphalt. The surface would be designed to state highway standards plus 10% to resist frost heaves and allow occasional use by 100,000-pound vehicles during favorable conditions.

- Selected side slopes on the relocated and existing road would be rehabilitated with retaining structures and vegetation to reduce erosion.

- The road would be single-lane, 14 feet wide with a 12-foot travelway and 1-foot shoulders. There would be some short sections where the width would be less than 14 feet. This is the widest practical continuous width without new cuts and fills which would greatly increase erosion hazard. Turnouts would be provided to allow two-way traffic.

- All road modifications would be restricted to the existing roadway. Only one new cut and fill will be required.

- Abandoned road segments would be stabilized to reduce erosion.

- Culverts and other drainage facilities would be improved to reduce erosion and sediment, and to eliminate barriers to fish passage.

- Snowplowing and winter access seven days per week would be allowed in compliance with Forest Service guidelines and specifications to minimize sediment and disturbance of wintering wildlife, and to protect structures and public safety.

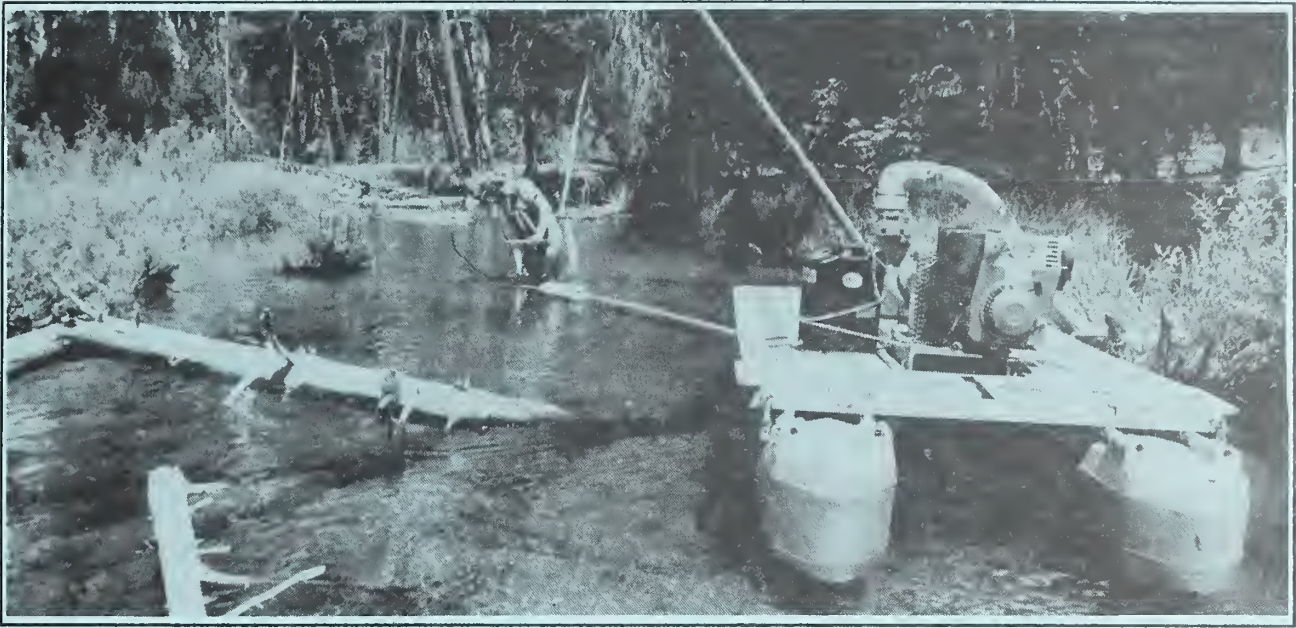
- The mitigation measures in the accompanying table would be used to achieve project objectives, protect other resource values and provide for safe public use of the road.

- Comprehensive short- and long-term monitoring would be used to ensure construction standards and guidelines, mitigation requirements and best management practices are followed, are effective, and contribute to meeting overall, long-term Forest Plan objectives.

Mitigation Measure	Specific Requirements
Toxic Spill Prevention	Protection of the South Fork from toxic spills will be accomplished by prohibiting hauling of toxic materials, by both commercial and noncommercial users on the South Fork Salmon River Road. Exception can be made for supply of the Reed Ranch and Krassel Guard Station, or emergency situations, with proper safeguards. Criteria for permitting exceptions are presented in Appendix E to the Final EIS.
Protection of Cultural Resources	<p>Cultural resources will be protected in most cases by avoiding disturbances to cultural sites. Where cultural resource properties cannot be protected, a data recovery plan will be prepared and implemented to ensure recovery of cultural material.</p> <p>Any recovered cultural material will be included in an interpretive display with emphasis on the value of and need for preservation of cultural sites.</p>
Fish Protection	<p>Interpretive signing will include visitor contact points at Cabin Creek on the south end of the project area and at Indian Point at the north end. Emphasis will be on prevention of harassment and disturbance of anadromous fish. Instream structures that impede fish passage will be removed at Cabin Creek, Goat Creek and Four Mile Creek, and Goat Creek and Four Mile Creek culverts will be replaced with bridges or open bottom culverts.</p> <p>The Forest Service will consult with the Idaho Department of Fish and Game regarding possible changes in fishing seasons or a permit season for salmon fishermen if numbers of fishermen cause riparian damage or sediment increases.</p>
Wildlife Protection	<p>Closures to off-road vehicle use will be initiated when users cause unacceptable impacts to wintering big game animals.</p> <p>A road closure will be initiated when/if heavy snowfall causes above-normal concentrations of big game animals in the road corridor. Coordination with road users will be necessary.</p> <p>The Forest Service will consult with Idaho Department of Fish and Game regarding possible changes in hunting seasons and/or permits if impacts to big game or gray wolf become unacceptable.</p>
Endangered Species	<p>In accordance with the Biological Opinion of the USFWS, the Forest Service will take the following actions to protect the gray wolf and be consistent with the wolf recovery effort:</p> <ul style="list-style-type: none"> · Inform the public about the protected status of the gray wolf and the wolf recovery effort. · Provide law enforcement surveillance to deter violators. · Reduce human disturbance and potential poaching of wolves, elk and deer during winter months.

Overview/Summary

Mitigation Measure	Specific Requirements
Endangered Species, cont'd	<p>Improve elk and deer wintering habitat up gradient from the road. Maintain screening of trees and shrubs between the road and winter forage.</p>
Recreation	<p>Road access will be provided to existing dispersed recreation area along Cabin Creek.</p> <p>A trail for foot travel and nonmotorized mountain bikes will be constructed on the closed portions of the road along the river.</p> <p>Parking will be restricted to designated areas.</p> <p>Access to campgrounds, parking areas, and other recreation facilities will be provided.</p>
Public Safety	<p>Road design will include turnouts, widening of curves, signing, striping, and speed control measures as needed to provide for safe use of the road.</p> <p>A road closure will be initiated when winter driving conditions become unsafe.</p>
Sediment Prevention and Reduction	<p>The normal operating season for road construction will be June 1 to September 15.</p> <p>The construction contract will contain clauses to minimize sediment during construction. Measures such as silt fences, filter windrows and straw bales will be required. Temporary retaining structures will be used to catch sediment from cut and fill slopes.</p> <p>Campground roads will be surfaced.</p> <p>Sediment (sand) will be removed to the extent possible from the SFSR at The Oxbow, and potentially from Krassel Hole and other areas, for road fill. Direct removal of sediment from Curtis Creek and/or Rice Creek will be accomplished to mitigate sediment produced during the construction period. The intent is to directly remove as much or more sediment directly from the river than will be contributed by construction activities.</p> <p>The road will be completed in sections to minimize the area exposed at any given time.</p> <p>Sediment reduction and soil stabilization structures will be incorporated into the design of the road where needed.</p>
Snow Removal	<p>Sediment produced by snow plowing will be minimized through controls initiated in the maintenance plan, including but not limited to method of plowing, prohibition of sand and salt, and protection of structures such as curbs, retaining walls, and bridge abutments.</p> <p>Road crossings through plowed snow berms will be provided for wildlife.</p>



Under the preferred alternative, sediment will be removed from the South Fork and tributaries in amounts equal to or greater than projected to enter streams as the result of reconstructing the road. A small suction dredge like the one illustrated here will be used to remove sediment from fish spawning gravels in small streams. Larger, higher volume equipment will be used to remove sediment from the South Fork, e.g., from The Oxbow illustrated at the beginning of this section.

The Environmentally Preferred Alternative

By any standard of measure, the South Fork Salmon River drainage contains an extraordinary wealth and diversity of resource values. Different uses and enjoyment of these values sometimes conflict.

As custodian of this unique area, the Forest Service's challenge is to balance protection and management to best meet six goals provided by the National Environmental Policy Act while complying with the National Forest Management Act, Endangered Species Act, and other applicable laws:

1] Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

2] Assure for all Americans safe, healthful, productive and esthetically and culturally pleasing surroundings;

3] Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

4] Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and a variety of individual choice;

5] Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

6] Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

As summarized in the following table, of all alternatives considered in the draft and final environmental impact statements, the preferred alternative (RA), and Forest Plan direction (NAFP), best meet these six goals.

Forest Plan direction for the South Fork Road would minimize - but not eliminate - the potential for accidental toxic spills, and would minimize adverse impacts of winter access. This alternative also would enhance the primitive recreational experience valued by many forest users.

However, Forest Plan direction would not reduce sediment to as great an extent as the preferred alternative, and would reduce road access for recreationists and narrow options for winter access to Yellow Pine.

The Alternatives and the Issues

Alternatives	Fish Habitat/ Water Quality	Access	Winter Access/ Big Game	Cost Efficiency
NAFP No Action- Forest Plan Direction	<ul style="list-style-type: none"> Second greatest reduction in erosion (same as EA). Most reduction in sediment delivery. Lowest risk for toxics. 	Allows no motorized access for through traffic. Converts 19 miles of road to trail.	Allows no winter access. Least disturbance to big game.	Second lowest total cost. Lowest maintenance and user costs.
NA No Action	<ul style="list-style-type: none"> Least reduction in erosion. Least reduction in sediment delivery. Highest risk for toxics. 	Perpetuates existing year-round road access, with closures during muddy conditions.	Periodic closures during muddy conditions. Disturbance to big game.	Lowest total cost. Highest user cost.
EA Existing Road- Asphalt Surface	<ul style="list-style-type: none"> Second greatest reduction in erosion. Greatest reduction in sediment delivery. Second highest risk for toxics (same as EG). 	Provides year-round, paved road access. Closures for safety during extremely icy conditions.	Infrequent closures. Winter access option 1 - best for big game. Winter access option 2 - moderate for big game. Winter access option 3 - worst for big game.	Highest total cost. Lowest maintenance and user costs.

Alternatives	Fish Habitat/ Water Quality	Access	Winter Access/ Big Game	Cost Efficiency
EG Relocate Road- Gravel Surface	<ul style="list-style-type: none"> Fourth greatest reduction in erosion. Third greatest reduction in sediment delivery. Second highest risk for toxics (same as EA). 	Provides year-round, gravel road access. Closures for safety and spring breakup.	Same as Alt. EA.	High total cost. Highest maintenance and user costs.
RA Relocate Road- Asphalt Surface	<ul style="list-style-type: none"> Greatest reduction in erosion (same as RAG). Greatest reduction in sediment delivery. Third highest risk for toxics (same as RG & RAG). 	Provides year-round, paved road access. Closures for safety. Converts 4 miles of road to trail.	Same as Alt. EA.	High total cost. Lowest maintenance and user costs.
RG Relocate Road- Gravel Surface	<ul style="list-style-type: none"> Third greatest reduction in erosion. Second greatest reduction in sediment delivery. Third highest risk for toxics (same as RA & RAG). 	Provides year-round, gravel road access. Converts 4 miles of road to trail.	Same as Alt. EA.	High total cost. Highest maintenance and user costs.
RAG Relocate Road- Mix of Asphalt and Gravel Surfaces	<ul style="list-style-type: none"> Greatest reduction in erosion (same as RA). Greatest reduction in sediment delivery (same as NAFF, EA & RA). Third highest risk of toxics (same as RA & RG). 	Provides year-round access on a mix of road surfaces. Closures for safety and spring breakup. Converts 4 miles of road to trail.	Same as Alt. EA.	High total cost. Intermediate maintenance and user costs.

Overview/Summary

The preferred alternative would reduce sediment in the South Fork Salmon River and tributaries to a greater extent than Forest Plan direction. However, even with the proposed restrictions on commercial and noncommercial transport of toxic materials, the preferred alternative would have greater potential for accidental toxic spills.

By providing for winter access, the preferred alternative would have greater potential for disruption of wildlife than Forest Plan direction.

The presence of a paved road would unavoidably diminish the primitive recreational experience, but would enhance road access for recreationists and provide more winter access options than Forest Plan direction.

Neither alternative is superior on all counts to the other. The choice of an environmentally preferred alternative depends on one's perspective, and on the weight given various resource values.

Given congressional direction to pave the road and court direction regarding winter access, it is unlikely Forest Plan direction to close a major portion of the road could be implemented.

The Preferred Alternative:

- Meets congressional intent as reflected in the Fiscal Year 1989 appropriation to pave the South Fork Road;
- Complies with the federal court decision enjoining the Forest Service from prohibiting snowplowing and vehicular travel pending road reconstruction and paving;
- Minimizes the road's contribution of sediment to the South Fork and tributaries;
- Provides recreationists improved road access to the South Fork and a scenic loop road.
- Provides additional anadromous fish protection by removing passage barriers, and by direct removal of sediment;
- Provides mitigating measures to minimize adverse impacts to wolf, big game, resident fish, and to recreation, visual and cultural resources;
- Meets all Forest Plan goals, objectives, standards and guidelines except those specific to the South Fork Road which are amended by the Record of Decision implementing the preferred alternative.

The decision to reconstruct and pave the South Fork Salmon River Road, including mitigating measures to protect resource values, achieves the balance of natural resource and human values intended by the National Environmental Policy Act.

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Chapter I

Purpose and Need for the Action

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Chapter I

Purpose and Need for the Action

Introduction

The South Fork of the Salmon River contains important habitat for summer chinook salmon. These runs of ocean-going fish were once part of the largest and most valuable segment of the world's largest run of anadromous chinook salmon. Their population has been drastically reduced from the effects of dams, over fishing, and habitat degradation. In the 1960s a combination of natural events and human actions resulted in massive erosion causing large sediment deposits in the South Fork Salmon River. The fish habitat was seriously damaged.

The Forest Service has taken many measures over the years to restore the damaged habitat. And, the restorative efforts have helped the river flush some sediment and modestly improved the fish habitat. The river's restoration has reached a delicate balance. The amount of sediment reaching the river about equals the river's ability to flush the sediment. This balance just sustains the currently poor spawning habitat conditions. The river needs additional sediment reductions to upset the balance and continue its recovery.

The Payette and Boise National Forests share management of the South Fork Salmon River. While the Forests were developing their Land and Resource Management Plans (Forest Plans), management direction for the South Fork Salmon River drainage was very important. The analysis done for the Payette National Forest Plan determined that the South Fork Salmon River Road, which runs next to many miles of the river, was the largest remaining single source of man-caused sediment in the drainage.

Both Forests included in their Forests Plans long-term direction to improve the fish habitat in the river by reducing the sediment reaching the river. They would eliminate and convert about 19 miles of the South Fork Road to a trail, relocate and gravel 5 miles, and gravel the remaining 12 miles.

Because it would take several years to carry out the long-term direction for the road, the Forests developed short-term or interim management direction. November 1988, the Payette and Boise National Forest Supervisors decided to close the road during the winter months (January 1 to April 1) to reduce the sediment generated from the road's winter use.

Need for the Environmental Analysis

A congressional appropriation and a court order initiated the need to reanalyze the Forest Plan direction for the South Fork Salmon River Road.

Long-Term Forest Plan Direction

The United States Congress allocated \$8 million in the 1989 Appropriations Bill (H.R. 4867) for the Forest Service to pave the South Fork Salmon River Road. The congressional appropriation had two primary objectives for the South Fork Salmon River Road:

- to reduce sediment reaching the South Fork Salmon River to the fullest extent possible; and
- maintain motorized access on the road.

(Paving the entire the South Fork Salmon River Road was one of many projects examined in the Forest Plan analysis. Although the Forests found that paving the road would reduce the most sediment and maintain motorized travel, they believed it was unlikely they would receive the necessary money.)

The Forest Service Intermountain Regional Forester asked the Payette National Forest Supervisor to reanalyze the road's management direction based on the objectives of the congressional appropriation.

Short-Term Direction

Yellow Pine residents, a community whose access was restricted by the short-term management direction for the road, appealed the Interim Management Decision to close the road during the winter.

On December 22, 1988, the U.S. District Court of Appeals issued an order to the Forest Service enjoining them from prohibiting snowplowing and vehicular travel on the South Fork Salmon River Road. The order went into effect immediately and allowed unrestricted travel except during extremely muddy conditions. The Forest Service agreed to reevaluate their management as settlement of the order.

The Project Area

The South Fork Salmon River Road Project area begins at the Warm Lake Highway and continues to the confluence of the South Fork Salmon River with the East Fork of the South Fork Salmon River or approximately 31 miles (See Vicinity Map on inside front cover). The project area includes the area from the river to the top of the cut slope of the road, areas above the road that are contributing sediment, such as slumps, and alternate road locations.

The Decisions to be Made

Forest Supervisors Veto J. LaSalle (Payette National Forest) and Dave Rittersbacher

Purpose and Need for the Action

(Boise National Forest) will select an alternative for long-term direction for the South Fork Salmon River Road that best meets the intent of the congressional appropriation. If the alternative selected is different from the Forest Plan direction, Forest Plan amendments will be prepared.

The Forest Supervisors will also decide on winter management of the road to comply with the stipulation and order of the U.S. District Court of Appeals (Civil Case No. 88-1061). They will also make that decision based on this analysis.

Forest Plan Decisions

This environmental analysis and document is tiered to the Payette and Boise National Forest Plans and their associated Final Environmental Impact Statements (FEISs). The actions being considered are within the scope of those programmatic documents. Where appropriate, analysis and discussions in the Forest Plans, the FEISs, and other supporting documents will be incorporated by reference. For more information on tiering, see Title 40 Code of Federal Regulations Part 1502.20.

Any amendment to the Forest Plans will be specifically stated in the Record of Decision for the South Fork Road Project.

Copies of the Forest Plans, the FEISs, and other referenced studies and reports are available for review at the Payette National Forest Supervisor's Office in McCall, Idaho.

Organization of the Document

This document follows the format established in the Council on Environmental Quality Regulations (40 Code of Federal Regulations parts 1500-1508).

This document has six main chapters. They are:

- **Chapter I - Purpose and Need for the Action:** discusses the purpose and need for the action and introduces the important issues.
- **Chapter II - The Alternatives Considered:** describes alternative ways of resolving the issues described in Chapter I. It also compares the alternatives and identifies the Forest Service preferred alternative.
- **Chapter III - The Affected Environment:** describes the social, economic, physical, and biological characteristics of the affected environment as they relate to the issues.
- **Chapter IV - The Environmental Consequences:** describes the potential consequences of the alternatives if they were implemented.
- **Chapter V - List of Preparers:** lists individuals involved in the preparation of the EIS.
- **Chapter VI - The Public's Involvement:** displays the public and agency comments on Draft EIS and Forest's response to the comments.

Scoping the Issues

The Forest Service developed preliminary issues from the Payette National Forest Plan and from public comments on the Interim Road Management Decision. They received additional comments from a February 1989 mailing and a Notice of Intent to Prepare an Environmental Impact Statement that appeared in the Federal Register. The Forest Service distributed a Draft EIS for public review on November 8, 1989, and they received additional comments. For more information on the issue-scoping process, see Chapter VI.

The Issues Associated with the Proposed Project

Based on the issue scoping described above, the Forest Service determined the following issues to be the basis for analysis for the proposed project.

Issue 1 - FISH HABITAT/WATER QUALITY

The recovery of salmon and steelhead populations is part of the long-term Forest Plan direction for the South Fork Salmon River. Sediment deposits in the river have seriously damaged critical habitat for the fish. The Forests have scheduled projects that would reduce erosion and sediment delivery to the river and its tributaries.

The public wants this project to meet or exceed the Forest Plan direction for sediment reduction. The public is also concerned that the effects associated with road use, such as risks from transporting toxic materials, could cause setbacks in the recovery of the fish habitat. The State of Idaho designated the South Fork as a Water Quality Limited segment and a Stream Segment of Concern as part of the State's process for implementing the Clean Water Act.

Issue 2 - ACCESS

The South Fork Salmon River Road is a popular route for recreationists in the summer and fall. People use the road to access trails, streams, and lakes and enjoy the scenic qualities, remote character, and wildlife of the river canyon. People also drive the road to access private property and mining claims.

Some people want the area returned to a more natural condition by eliminating motorized access or, at the least, modifying the esthetics and improving the access as little as possible.

Recreationists, environmentalists, Yellow Pine residents, other private landowners, and mining companies and their employees are particularly interested in this issue.

Issue 3 - WINTER ACCESS AND BIG GAME WINTER RANGE

The South Fork Salmon River Road is the most practical route for winter access to Yellow Pine and surrounding mines. Yellow Pine residents especially want the road for winter access to their properties.

Adequate winter range is often a limiting factor for deer and elk populations in Idaho.

Purpose and Need for the Action

The South Fork Salmon River canyon provides important winter range. Research has shown that human disturbance, primarily motorized vehicles, reduces big game use of available forage along open-road corridors. There is a conflict between the desire for winter use of the road and the effects on wintering big game.

Issue 4 - COST EFFICIENCY

Cost efficiency is achieving some desired level of outputs, including environmental, economic, or social effects, for the least cost. For the South Fork Salmon River Road project, the specified level of output is improved fish habitat by reducing sediment delivered to the South Fork Salmon River. The investment, maintenance, and user costs will be compared to their effectiveness to reduce sediment.

Other Issues

The public raised other issues, but they were outside the scope of the project, outside the jurisdiction of the Forest Service, or resolved in some way, such as with mitigation measures.

Bear and Mountain Lion Hunting

Dogs used to hunt bear and mountain lions in the project area disturb wintering big game. This disturbance could be reduced or eliminated through changes in hunting regulations. The Forest Service may request that the Idaho Department of Fish and Game analyze the impacts to decide if changes in hunting regulations are desirable.

Threatened and Endangered Species

The South Fork Salmon River canyon provides habitat for two species of threatened and endangered animals.

Northern Rocky Mountain Gray Wolf

The U.S. Fish and Wildlife Service has classified the Northern Rocky Mountain gray wolf as an endangered species. They identified central Idaho in the Northern Rocky Mountain Wolf Recovery Plan as an area essential to the recovery of the gray wolf. The abundance of reports of wolf activity in the South Fork Salmon River drainage gives basis for the projected presence of four to six wolves in the area.

Based on an assessment and biological opinion completed by the Forest Service for the preferred alternative in this Final Environmental Impact Statement, including the road improvement and winter access management, the Forest Service concludes the proposed action will not adversely affect the recovery of the gray wolf in central Idaho.

Bald Eagle

The bald eagle has been observed in the South Fork Salmon River drainage in the winter, but they typically return to nesting sites outside the drainage each spring. Although there have been spring and summer sightings, there are no known nesting sites in the river corridor. The completed Biological Opinion referenced above indicated that winter road management activities would have no effect on bald eagles.

Other Threatened, Endangered, and Sensitive Species

The Forest Service has classified the Chinook salmon and steelhead trout, which are addressed in the fisheries section of this document, as sensitive species. The National

Chapter I

Marine Fisheries Service has received a formal petition to review the status of up-river spring and summer chinook stocks for potential listing under the Endangered Species Act. The petitioners include: Oregon Trout, and Idaho and Oregon Chapters of the American Fisheries Society.

No other known sensitive plant or animal species has been identified in the area.

Snowmobile Use on Roads Other than the South Fork Salmon River Road

This analysis does not address the management of other roads in the drainage; therefore, this issue is outside the scope of the analysis.

Wild and Scenic River Status

The South Fork Salmon River was recommended in the Forest Plan for inclusion into the Wild and Scenic River System. This project will not change the current relationship of the road and the river or the river's status for classification.

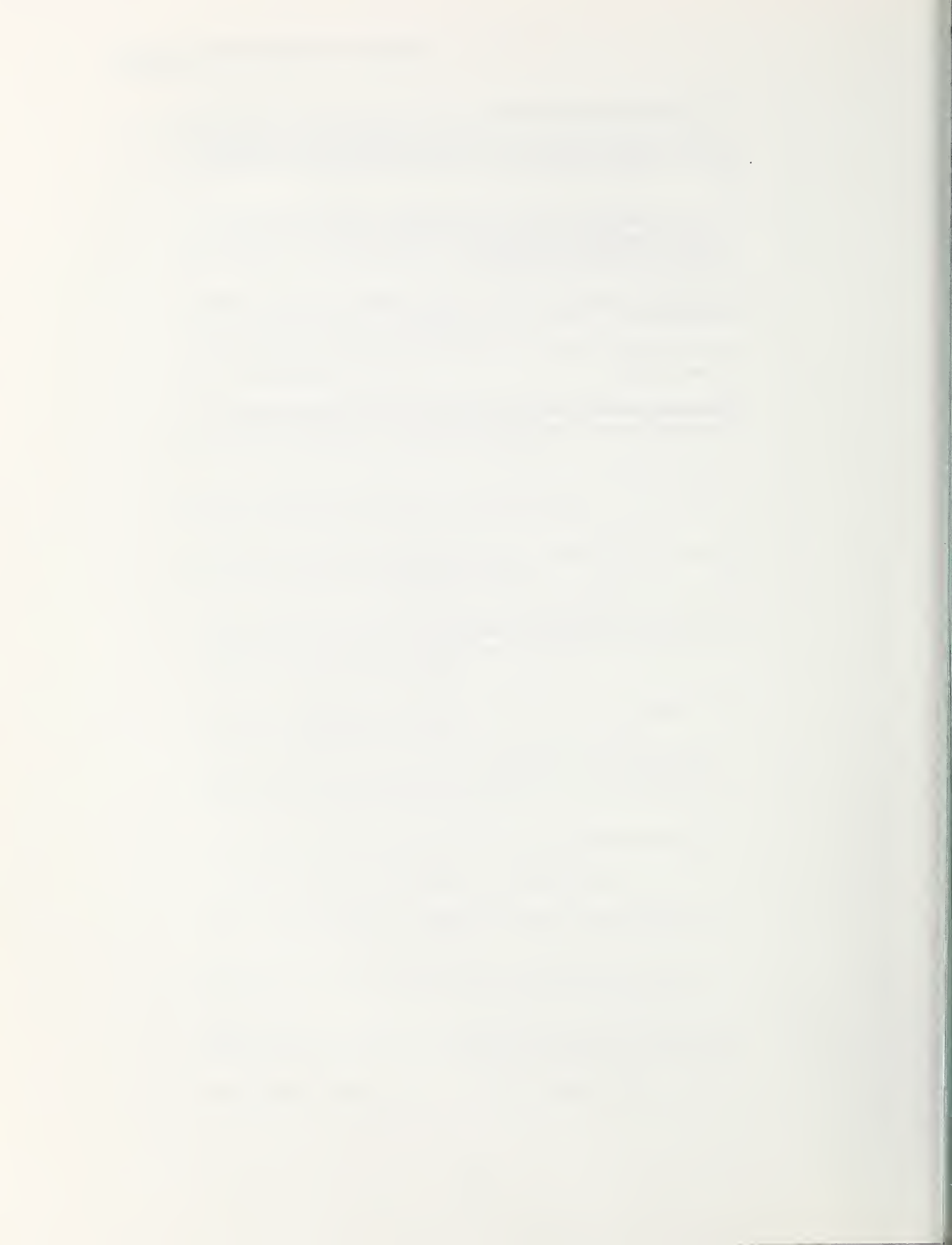
Changes Between the Draft and Final EIS

The following is a summary of some of the more significant changes that occurred to the analysis and document between the Draft and Final EIS:

- Three alternatives that were not examined in detail in the Draft EIS were reincorporated as specific alternatives and fully analyzed in the Final EIS in response to public comment. They are a second No Action alternative and two different surfacing alternatives for the existing road location.
- Material was reorganized in the Final EIS to provide clarity and to simplify review of the document. A bibliography was added.
- A more detailed analysis of short-term and long-term sediment produced from the South Fork Salmon River Road project was completed for all alternatives. A more detailed sediment analysis was also performed.
- The Goat Creek and Penny Springs by-passes were dropped from consideration.
- An analysis was done for the state of Idaho's proposed alternative.
- More detail on road design was completed and the proposed road relocations were analyzed in more depth than for the Draft EIS.
- More analysis was completed on direct removal of sediment from the South Fork Salmon River.
- Additional inventories/proposals were completed and incorporated into the analysis for soils, fish barrier removal, and use of soil bioengineering for slope stabilization.
- Consultation was completed with the U.S. Fish and Wildlife Service.

Purpose and Need for the Action

- Cultural site inventory was completed.
- The Final EIS for the Warm Lake Fire Complex rehabilitation was completed and pertinent information incorporated into the cumulative effects analysis for this Final EIS.
- Coordination with the state of Idaho on the designation of the South Fork Salmon River as a "Water Quality Limited Segment" and "Stream Segment of Concern" was completed and included in this Final EIS.
- Direct mitigation for sediment produced during the construction period was added to the alternatives.
- The Boise National Forest Plan was completed. This Final EIS is tiered to the Boise National Forest Plan.
- Mileage discrepancies between the Forest Plan and the Draft EIS were reconciled with surveyed distances.



Chapter II

The Alternatives Considered

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Chapter II

The Alternatives Considered

Introduction

This chapter presents the alternatives considered by the Payette National Forest, compares the alternatives, and summarizes the consequences of the alternatives if they were carried out.

Process Used to Formulate the Alternatives

An interdisciplinary team of resource specialists from the Boise and Payette National Forests and members of the public (See Chapter VI for more information on the public's participation in the process) developed the alternatives.

The project has two primary objectives:

- reduce long-term sediment delivery to the river to the lowest feasible level without causing significant short-term sediment increases during the project
- maintain motorized access on the South Fork Salmon River Road.

After considering the issues and the objectives of the project, the interdisciplinary team developed investment and road management options as possible solutions.

The interdisciplinary team reviewed the options to decide how well the options would meet the objectives of the project. They dismissed those that clearly would not meet the objectives. The remaining options were either:

- incorporated into all alternatives as constraints, design features, road management and maintenance requirements or mitigation
- incorporated into specific alternatives.

Because of comments received on the Draft EIS, the interdisciplinary team reincorporated three alternatives that they had not studied in detail in the Draft EIS and fully analyzed them in the Final EIS. They include alternatives that would pave the existing road location with asphalt, gravel the existing road location, and take no action with a continuation of current management.

Alternatives Considered But Not Studied in Detail

The interdisciplinary team considered a wide range of alternatives in to assess the

Chapter II

reasonableness of the alternatives considered in detail. The alternatives eliminated from detailed study and the rationale for their dismissal are as follows:

- **Other road locations:** Several other road relocations (by-passes) were evaluated and dropped for various reasons. At some relocations, new, large, unstable cut banks could potentially increase sediment production and sediment delivery. At other locations, the cost of road reconstruction would have been exorbitant. Improving portions of the existing road would have less risk to fish habitat than relocating the road to some proposed locations.
- **Other road surface treatments:** Many road surface treatments, other than gravel or asphalt, were examined. Most treatments were not cost efficient for the economic life of the road or would not reduce sediment. Some would not meet the objective of reducing maintenance costs. Some would not handle the design vehicle for use during the winter period without road damage. Others would introduce chemicals that would increase the risk to fish from toxic substances.
- **Mixing road surface treatments for the existing road:** A mix of asphalt and gravel treatments for the existing road would not reduce sediment as much as using asphalt only.
- **Road widths other than 14 feet (12-foot travel surface with 1-foot shoulders):** A road narrower than 14 feet would minimize disturbance to cut and fill slope, but would increase the risk of accidents and fuel spills and limit snow removal and some larger vehicles and equipment. A 14-foot road could generally be provided with little disturbance to the cut banks and would better meet the project objectives. Road widths of 16, 18, or 20 feet would be difficult to construct in several places without major disturbance of the cut and fill slopes. The increased risk would not meet the objective of protecting fish. A variable road width would cause traffic flow problems where the road width narrowed and could cause an increase in accidents.
- **Other design vehicles:** A design to fit vehicles larger than a low-boy with a total weight of 100,000 pounds was dismissed because it would require a greater width than could be built without causing increases in sediment production and more expensive bridges than the road would accommodate.
- **Other winter access options:** Several other options for winter access on the South Fork Salmon River Road were examined. They included:

Yellow Pine residents only: The option of allowing only Yellow Pine residents access for either two days or seven days per week was evaluated. This option was dismissed because of an inability to enforce and administer such a restriction.

Open road between two and seven days per week: Based upon the opinion of the forest wildlife biologist, in consultation with the U.S. Fish and Wildlife Service, there would be little difference in effects on threatened and endangered species with an open road between two and seven days.

Alternatives Considered in Detail

The interdisciplinary team developed a range of alternatives for detailed analysis. The alternatives were developed to respond to the issues listed in Chapter I, the project

objectives, and public comments on the Draft EIS.

Features Common to the Alternatives

The following constraints, design features, management and maintenance considerations, and mitigation measures were developed as part of the alternatives to meet the project objectives.

Constraints

The following constraints were included in all alternatives. They were developed from Forest Plan standards and guidelines, Forest Service manual direction, and congressional and court actions:

- Road relocations (by-passes) must be beneficial to fish.
- Fish, in all their life stages, will be protected from damage during and after construction.
- Stable cut and fill slopes will not be disturbed unless sediment can be reduced.
- Fish passage will be provided at all stream crossings. No new barriers to fish passage will be created. (all alternatives except NA)
- The most cost-effective methods for meeting project objectives will be used.
- Hauling of toxic materials, as defined in the Payette National Forest Plan, page IV-238, and the Boise National Forest Plan, page IV-80 (See Appendix E), will be stringently controlled or prohibited.
- The visual character will be retained as outlined in the Forest Plan, page IV-23, recognizing that the primary objective of most erosion and sediment control structures is to reduce sediment.

Design Features

The following design features were included in all action alternatives. If after road design specifics are developed or during implementation of the plans the Forest Service finds that the project objectives are not being met, design features may be dropped or modified.

- Road realignment will be at the minimum and must result in sediment reduction and improved public safety.
- Road prism design will include the following items:

Water runoff from the road prism will be managed to minimize erosion on site or below the road.

Drainage crossings (bridges and culverts) will be designed using a minimum of a 30-year structure life and a 70 percent probability of not failing (designed to survive a 90-year storm event). High value structures or structures with large fills may require a higher probability of survival.

Cut and fill slopes and stream crossings will be stabilized to the fullest extent possible with current knowledge and reasonable cost. This will apply to reconstructed roads, segments of eliminated roads, and new roads.

Retaining structures will be installed in areas of unstable cut and fill slopes.

Road design will minimize maintenance costs and maintenance-caused sedimentation where feasible.

Road design will provide for all-weather use by expected traffic and vehicle types.

Spring areas will be treated to stabilize the area, and drainage piping will be installed where appropriate.

Multiple design methods will be used to reduce sediment and manage water. Appendix B describes the methods in detail.

The road will be constructed with a 12-foot travelway with exceptions for short distances where natural features constrict the road width.

The road will be designed to fit a tractor and low-boy meeting State of Idaho legal load limits.

- Several rock and barrow pits will be developed for the project. Most will be incorporated into the road prism. Other pits will be reshaped and revegetated after use. Specific reclamation plans will be prepared for each site.
- Abandoned roads will be treated and managed in the following manner:

All stream channels will be restored to a near-natural state at road crossings.

Fill slopes will be pulled back to stable angle and revegetated.

Fill material will be removed from flood plains where the road crosses streams.

Sediment retaining structures or barriers will be constructed in unstable areas.

All culverts will be removed.

Abandoned roads will be scarified to reduce soil compaction.

All exposed areas will be revegetated and fertilized. The most appropriate methods for ground cover and erosion control will be used. A variety of shrubs, herbaceous plants and trees with special consideration for riparian species in riparian areas will be used. Use of forage or browse species that would encourage ungulate use on cut slopes will be avoided.

The trail, where constructed, will be placed to fit the land and will not interfere with sediment reduction measures. A tread width of 26 inches will be constructed where the old road does not provide for the trail.

The Alternatives Considered

Only foot traffic and nonmotorized bicycles will be permitted on sections of the road converted to a trail.

Road Management and Maintenance Requirements

- A road management plan will be prepared after the road design is completed. For the action alternatives, the plan will include, as a minimum, road use restrictions, and provisions for a contact station near Cascade, road use monitoring and signing specifications, a road maintenance plan, and a toxic spill contingency plan.
- The road will be managed to provide for snow removal and winter use and continued protection of fish habitat.
- The appropriate snow removal equipment will be specified in a maintenance plan. Snow removal specifications will prohibit the use of sand or salt (pea gravel will be permitted), excessive piling of snow on cut and fill slopes, and damage to structures or facilities. Escape routes for big game will be provided where needed.

Mitigation Measure	Specific Requirements
Toxic Spill Prevention	Protection of the South Fork from toxic spills will be accomplished by prohibiting hauling of toxic materials, by both commercial and noncommercial users on the South Fork Salmon River Road. Exception can be made for supply of the Reed Ranch and Krassel Guard Station, or emergency situations, with proper safeguards. Criteria for permitting exceptions are presented in Appendix E to the Final EIS.
Protection of Cultural Resources	<p>Cultural resources will be protected in most cases by avoiding disturbances to cultural sites. Where cultural resource properties cannot be protected, a data recovery plan will be prepared and implemented to ensure recovery of cultural material.</p> <p>Any recovered cultural material will be included in an interpretive display with emphasis on the value of and need for preservation of cultural sites.</p>
Fish Protection	<p>Interpretive signing will include visitor contact points at Cabin Creek on the south end of the project area and at Indian Point at the north end. Emphasis will be on prevention of harassment and disturbance of anadromous fish. Remove instream structures that impede fish passage at Cabin Creek, Goat Creek and Four Mile Creek, and replace Goat Creek and Four Mile Creek culverts with bridges or open bottom culverts.</p> <p>The Forest Service will consult with the Idaho Department of Fish and Game regarding possible changes in fishing seasons or a permit season for salmon fishermen if numbers of fishermen cause riparian damage or sediment increases.</p>

Chapter II

Mitigation Measure	Specific Requirements
Wildlife Protection	<p>Closures to off-road vehicle use will be initiated when users cause unacceptable impacts to wintering big game animals.</p> <p>A road closure will be initiated when/if heavy snowfall causes above-normal concentrations of big game animals in the road corridor. Coordination with road users will be necessary.</p> <p>The Forest Service will consult with Idaho Department of Fish and Game regarding possible changes in hunting seasons and/or permits if impacts to big game or grey wolf become unacceptable.</p>
Endangered Species	<p>In accordance with the Biological Opinion of the USFWS, the Forest Service will take the following actions to protect the gray wolf and be consistent with the wolf recovery effort:</p> <ul style="list-style-type: none">• Inform the public about the protected status of the gray wolf and the wolf recovery effort.• Provide law enforcement surveillance to deter violators.• Reduce human disturbance and potential poaching of wolves, elk and deer during winter months.• Improve elk and deer wintering habitat up gradient from the road. Maintain screening of trees and shrubs between the road and winter forage.
Recreation	<p>Road access will be provided to existing dispersed recreation area along Cabin Creek.</p> <p>A trail for foot travel and nonmotorized mountain bikes will be constructed on the closed portions of the road along the river.</p> <p>Parking will be restricted to designated areas.</p> <p>Access to campgrounds, parking areas, and other recreation facilities will be provided.</p>
Public Safety	<p>Road design will include turnouts, widening of curves, signing, striping, and speed control measures as needed to provide for safe use of the road.</p> <p>A road closure will be initiated when winter driving conditions become unsafe.</p>

The Alternatives Considered

Mitigation Measure	Specific Requirements
Sediment Prevention and Reduction	<p>The normal operating season for road construction will be June 1 to September 15.</p> <p>The construction contract will contain clauses to minimize sediment during construction. Measures such as silt fences, filter windows and straw bales will be required. Temporary retaining structures will be used to catch sediment from cut and fill slopes.</p> <p>Campground roads will be paved as part of project.</p> <p>Sediment (sand) will be removed to the extent possible from the SFSR at The Oxbow, and potentially from Krassel Hole and other areas, for road fill. Direct removal of sediment from Curtis Creek and/or Rice Creek sites will be accomplished to mitigate sediment produced during the construction period. The intent is to directly remove as much or more sediment directly from the river than will be contributed by construction activities.</p> <p>The road will be completed in sections to minimize the area exposed at any given time.</p> <p>Sediment reduction structures will be incorporated into the design of the road where needed.</p>
Snow Removal	<p>Sediment produced by snow plowing will be minimized through controls initiated in the maintenance plan, including but not limited to method of plowing, prohibition of sand and salt, and protection of structures such as curbs, retaining walls, and bridge abutments.</p> <p>Road crossings through plowed snow berms will be provided for wildlife.</p>

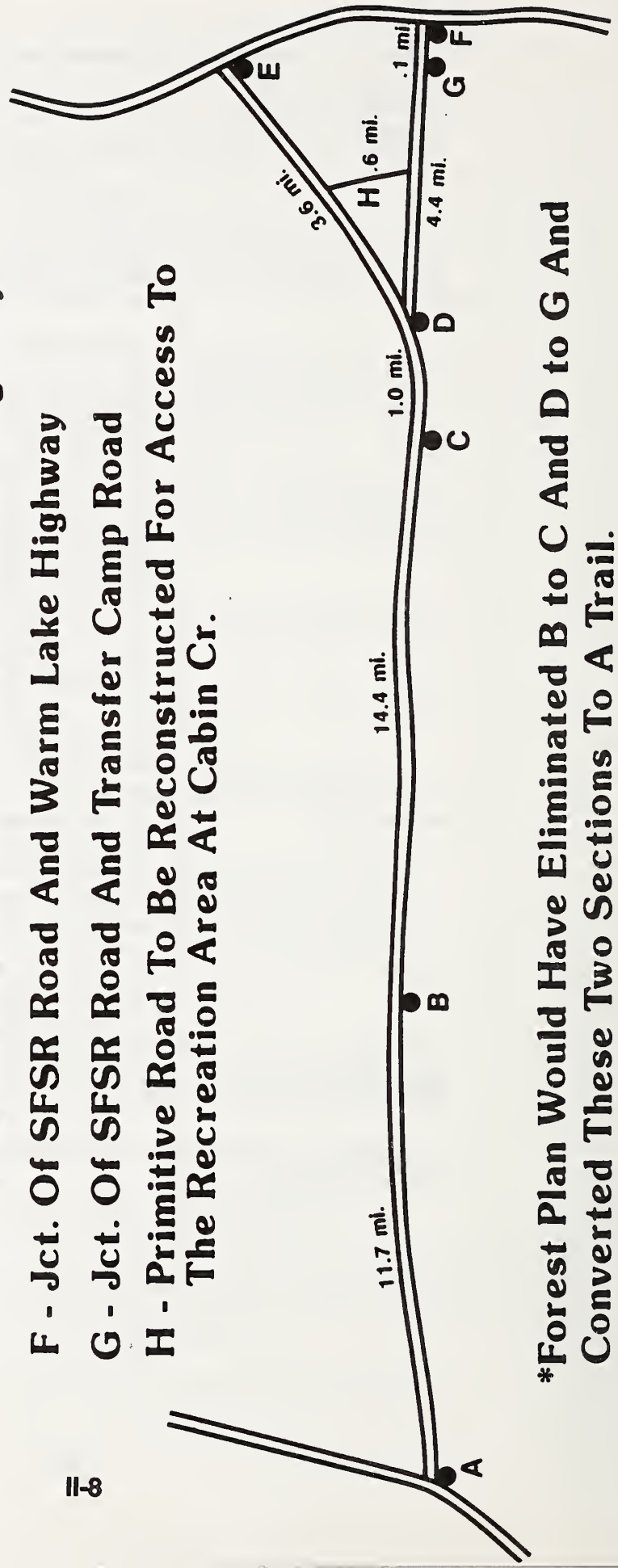
Descriptions of the Alternatives

Figure II-1 shows the road segments and mileages included in the descriptions of the alternatives that follow.

Figure II-1

South Fork Salmon River Road Mileages

- A - Jct. Of East Fk. Road With South Fork Salmon River Road
- B - Trailhead Per Forest Plan Direction
- C - Dollar Creek Bridge/Trailhead Per Forest Plan
- D - Jct. Knox Ranch Road And River Road
- E - Jct. Of Knox Ranch Road And Warm Lake Highway
- F - Jct. Of SFSR Road And Warm Lake Highway
- G - Jct. Of SFSR Road And Transfer Camp Road
- H - Primitive Road To Be Reconstructed For Access To The Recreation Area At Cabin Cr.



***Forest Plan Would Have Eliminated B to C And D to G And Converted These Two Sections To A Trail.**

Alternative NAFP - No Action Forest Plan Direction

The goal of this alternative is to reduce sediment from the South Fork Salmon River Road in the most cost-efficient method. This alternative would carry out the direction for the South Fork Salmon River Road that is described in the Record of Decision for the Payette National Forest Plan (See Forest Plan, pages IV-233 to IV-244).

About 19 miles of the existing South Fork Salmon River Road would be eliminated and converted to a nonmotorized trail. The surface and side slopes on the closed road would be restored to a natural condition as much as possible. Roaded access to the Reed Ranch would be maintained with the existing road in its present location (from the junction with the East Fork of the South Fork Road to the Reed Ranch). The Dollar Creek Road system would be accessed via the Knox Road (See Alternative NAFP map). Improvements would be made to the roads to reduce erosion. The surface would be graveled and side slopes would be rehabilitated using a combination of retaining structures and vegetation. The road width would stay the same on the South Fork Salmon River Road, and would be increased slightly on the reroute section.

Approximately 11 miles of the road has been surfaced with gravel (from the junction with the East Fork Road to the Reed Ranch). (This is part of the Forest Plan direction that has already been completed.) All activities would be restricted to the existing road prism. The road width would vary from a minimum of 14 feet near the Krassel Guard Station to 30 feet or more where earth has been pushed over the edge of the road.

About 4 miles of the road would be relocated to the old alignment from the Warm Lake Highway at Knox Ranch to the Penny Springs Campground. This would involve widening the old road and surfacing it with gravel to provide access to the Dollar Creek Road system.

Some cut and fill slopes along the road would be rehabilitated with a combination of retaining structures and vegetation; however, less than the action alternatives.

All culverts would be replaced or lined and additional culverts installed as needed.

Alternative NA - No Action

This alternative would leave the existing road in its present condition and permit year-round use with possible restrictions during muddy conditions.

Most of the road surface would be native material. The north 11 miles have been graveled. Portions of the section of road on the Boise National Forest would have clay and other materials on the surface. Maintenance would continue as provided for the past two years. The road width varies from a minimum of 14 feet near the Krassel Guard Station to more than 30 feet. The existing condition is described in more detail in Chapter III (See Alternative NA map). No investments would be made to reduce sediment.

Alternative EA - Asphalt Existing Road Alignment (31.5 miles)

The goal of this alternative is to maximize sediment reductions from the South Fork Salmon River Road by modifying the existing road with the least amount of land disturbance.

This alternative would surface the existing road alignment with asphalt. (See Alternative EA map) Side slopes along the road would be rehabilitated with retaining structures and vegetation. These changes would be designed to reduce sediment, but not to improve driving conditions.

The road would be a single 12-foot travel lane, with 6- to 10-foot wide turnouts. The travelway could be as narrow as 10 feet along a few short segments next to the river (The preliminary design shows that a 12-foot travelway may not be possible without creating new cuts or encroaching on the river in a few places; still, a 12-foot width has not been ruled out). The present road width would be narrowed in many places. Sediment reductions would not be compromised to widen the road. (See Alternative EA map).

All modifications would be restricted to the existing road prism, with minimum land disturbance.

Worn-out culverts would be replaced, plugged, or lined, and additional culverts would be installed as needed.

Outsloping would be used where it is compatible with the alignment and where water could be directed to the fill without creating the risk of saturation.

The South Fork Road could be used to provide access to the Yellow Pine community and the mines. Three winter road access options are possible as part of this alternative:

Winter Access Option 1 - prohibit motorized, wheeled access between January through March.

Winter Access Option 2 - allow snow removal with permitted travel 2 days per week between January through March.

Winter Access Option 3 - allow snow removal with permitted travel 7 days per week between January through March.

Alternative EG - Gravel Existing Road Alignment (31.5 miles)

The goal of this alternative is to reduce sediment from the South Fork Salmon River Road with the smallest amount of land disturbance, while retaining the scenic, undeveloped character of the road.

This alternative would surface the existing alignment with gravel. (See Alternative EG map) Side slopes would be rehabilitated with a combination of retaining structures and vegetation. These changes would be directed at sediment reduction and would not improve driving conditions, except during wet conditions.

The Alternatives Considered

The road would be a single 12-foot travel lane, with 6- to 10-foot turnouts. The road could be as narrow as 10 feet along a few short segments next to the river (See discussion for Alternative EA). The present road width would be narrowed in many places. Sediment reductions would not be compromised to widen the road.

Although the road would be constructed to a uniform width, eventually the road width would increase in some areas as gravel worked over the edge. Over time, the road would return to its present variable width. (See Alternative EG map).

All modifications would be restricted to the existing road prism, with minimum land disturbance.

Worn-out culverts would be replaced, plugged, or lined, and additional culverts would be installed as needed.

Ditches, culverts, and insloping would be used to manage water.

The South Fork Salmon River Road could be used as access to the Yellow Pine community and the mines. Three winter road access options are possible as part of this alternative:

Winter Access Option 1 - prohibit motorized, wheeled access between January through March.

Winter Access Option 2 - allow snow removal with permitted travel 2 days per week between January through March.

Winter Access Option 3 - allow snow removal with permitted travel 7 days per week between January through March.

Alternative RA - Relocate 4 Miles and Asphalt 30.7 Miles

The goal of this alternative is to gain the most sediment reduction without closing the South Fork Salmon River Road.

About 4 miles of the road would be relocated to the original alignment near the Knox Ranch (See Alternative RA map. All relocation alternatives use the same route. The Knox Road is on a flatter mid-slope bench with lower potential for erosion and sediment delivery to the river.)

The South Fork Salmon River Road would be surfaced with asphalt. Side slopes on the new route and existing road would be rehabilitated with retaining structures and vegetation. The relocation is intended to reduce sediment, not to improve driving conditions.

The road would be a single 12-foot travel lane, with 6- to 10-foot wide turnouts. The road could be as narrow as 10 feet along a few short segments next to the river (See the discussion for Alternative EA). The present road width would be narrowed in many places. Sediment reductions would not be compromised to widen the road.

Except for the transition from the Knox Road to the river road, all modifications would be restricted to the existing road prism on the South Fork Salmon River Road, but modifications on rerouted portions may involve some widening. Retaining structures would be used on some portions so that no new cuts would be created. Access to Cabin

Chapter II

Creek would be retained by reconstructing the existing primitive road.

Except for the section from Warm Lake Highway to the Transfer Station Road, the abandoned portion of road would be converted to a foot and mountain bike trail. The abandoned road would be treated with vegetation and sediment control structures to enhance natural recovery and minimize sediment. Cut and fill slopes would be allowed to reach a stable angle of repose not possible while a road is in place.

Worn-out culverts would be replaced, plugged, or lined, and additional culverts would be installed as needed.

Outsloping would be used where it is compatible with the vertical alignment and where water can be directed to the fill without creating the risk of saturation.

The South Fork Salmon River Road could be used to provide access to the Yellow Pine community and the mines. Three winter road access options are possible as part of this alternative:

Winter Access Option 1 - prohibit motorized, wheeled access between January through March.

Winter Access Option 2 - allow snow removal with permitted travel 2 days per week between January through March.

Winter Access Option 3 - allow snow removal with permitted travel 7 days per week between January through March.

Alternative RG - Relocate 4 Miles and Gravel 30.7 Miles

The goal of this alternative is to gain the most sediment reduction without closing the South Fork Salmon River Road, while retaining the scenic, undeveloped character of the road.

About 4 miles of the road would be relocated to the original alignment near the Knox Ranch (See Alternative RG map. All relocation alternatives use the same route. The Knox Road is on a flatter mid-slope bench with lower potential for erosion and sediment delivery to the river.)

The South Fork Salmon River Road would be surfaced with gravel. Side slopes on the new route and existing road would be rehabilitated with retaining structures and vegetation. The relocation was intended to reduce sediment, not to improve driving conditions, except during wet conditions.

The road would be a single 12-foot travel lane, with 6- to 10-foot turnouts. The road could be as narrow as 10 feet along a few short segments next to the river (See the discussion for Alternative EA). The present road width would be narrowed in many places. Sediment reductions would not be compromised to widen the road.

Except for the transition from the Knox Road to the river road, all modifications would be restricted to the existing road prism on the South Fork Salmon River Road, but modifications on rerouted portions could involve some widening. Retaining structures would be used on some portions so that no new cuts would be created. Access to Cabin Creek would be retained by reconstructing the existing primitive road.

The Alternatives Considered

Except for the section from Warm Lake Highway to the Transfer Station Road, the abandoned portion of road would be converted to a foot and mountain bike trail. The abandoned road would be treated with vegetation and sediment control structures to enhance natural recovery and minimize sediment. Cut and fill slopes would be allowed to reach a stable angle of repose not possible while a road is in place.

Worn-out culverts would be replaced, plugged, or lined, and additional culverts would be installed as needed.

Outsloping would be used where it is compatible with the alignment and where water can be directed to the fill without creating the risk of saturation.

The South Fork Salmon River Road could be used to provide access to the Yellow Pine community and the mines. Three winter road access options are possible as part of this alternative:

Winter Access Option 1 - prohibit motorized, wheeled access between January through March.

Winter Access Option 2 - allow snow removal with permitted travel 2 days per week between January through March.

Winter Access Option 3 - allow snow removal with permitted travel 7 days per week between January through March.

Alternative RAG - Relocate 4 miles and Asphalt 27.4 Miles and Gravel 3.3 Miles

The goal of this alternative is to gain the most sediment reduction in the most cost-efficient manner without closing the South Fork Salmon River, while retaining some of the scenic, undeveloped character of the road. (This is similar to an alternative suggested by the State of Idaho.)

About 4 miles of the road would be relocated to the original alignment near the Knox Ranch (See Alternative RA map. All relocation alternatives use the same route. The Knox Road is on a flatter mid-slope bench with lower potential for erosion and sediment delivery to the river.)

The Knox Road portion would be surfaced with gravel where sediment from the road would not reach live water. The remainder of the road would be surfaced with asphalt.

The road would be a single 12-foot travel lane, with 6- to 10-foot turnouts. The road could be as narrow as 10 feet along a few short segments next to the river (See discussion for Alternative EA). The present road width would be narrowed in many places. Sediment reductions would not be compromised to widen the road.

Except for the transition from the Knox Road to the river road, all modifications would be restricted to the existing road prism on the South Fork Salmon River Road, but would involve some widening on rerouted portions. Retaining structures would be used on some portions so that no new cuts would be created. Access to Cabin Creek would be retained by reconstructing the existing primitive road.

Except for the section from Warm Lake Highway to the Transfer Station Road, the abandoned portion of the road would be converted to a foot trail. The abandoned road would be treated with vegetation and sediment control structures to enhance natural recovery and minimize sediment. Cut and fill slopes would be allowed to reach a stable angle of repose not possible while a road is in place.

Worn-out culverts would be replaced, plugged, or lined, and additional culverts would be installed as needed.

Outsloping would be used where it is compatible with the alignment and where water can be directed to the fill without creating the risk of saturation.

Insloping would be used on the gravel portion.

The South Fork Road could be used to provide access to the Yellow Pine community and the mines. Three winter road access options are possible as part of this alternative:

Winter Access Option 1 - prohibit motorized, wheeled access between January through March.

Winter Access Option 2 - allow snow removal with permitted travel 2 days per week between January through March.

Winter Access Option 3 - allow snow removal with permitted travel 7 days per week between January through March.

Forest Service Preferred Alternative

The Forest Service preferred alternative is Alternative RA with Winter Access Option 3 (relocate 4 miles of the road and asphalt 30.7 miles; motorized wheeled access permitted 7 days per week during the winter).

Comparison of the Alternatives

Alternatives respond to issues in different ways. The following table displays how the alternatives respond to the issues identified in Chapter I and summarizes the consequences of the alternatives if they were carried out. See Chapter IV for a summary of the analysis that supports this comparison.

Table II-1 The Alternatives and the Issues

Alternatives	Fish Habitat/ Water Quality	Access	Winter Access/ Big Game	Cost Efficiency
NAFP No Action- Forest Plan Direction	<ul style="list-style-type: none"> •Second greatest reduction in erosion (same as EA). •Most reduction in sediment delivery. •Lowest risk for toxics. 	Allows no motorized access for through traffic. Converts 19 miles of road to trail.	Allows no winter access. Least disturbance to big game.	Second lowest total cost. Lowest maintenance and user costs.
NA No Action	<ul style="list-style-type: none"> •Least reduction in erosion. •Least reduction in sediment delivery. •Highest risk for toxics. 	Perpetuates existing year-round road access, with closures during muddy conditions.	Periodic closures during muddy conditions Disturbance to big game.	Lowest total cost. Highest user cost.
EA Existing Road- Asphalt Surface	<ul style="list-style-type: none"> •Second greatest reduction in erosion. •Greatest reduction in sediment delivery. •Second highest risk for toxics (same as EG). 	Provides year-round, paved road access. Closures for safety during extremely icy conditions.	Infrequent closures. Winter access option 1 - best for big game. Winter access option 2 - moderate for big game. Winter access option 3 - worst for big game.	Highest total cost. Lowest maintenance and user costs.

Alternatives	Fish Habitat/ Water Quality	Access	Winter Access/ Big Game	Cost Efficiency
EG Existing Road- Gravel Surface	<ul style="list-style-type: none"> •Fourth greatest reduction in erosion. •Third greatest reduction in sediment delivery. •Second highest risk for toxics (same as EA). 	Provides year-round, gravel road access. Closures for safety and spring breakup.	Same as Alt. EA.	High total cost. Highest maintenance and user costs.
RA Relocate Road- Asphalt Surface	<ul style="list-style-type: none"> •Greatest reduction in erosion (same as RAG). •Greatest reduction in sediment delivery. •Third highest risk for toxics (same as RG & RAG) 	Provides year-round, paved road access. Closures for safety. Converts 4 miles of road to trail	Same as Alt. EA.	High total cost. Lowest maintenance and user costs.
RG Relocate Road- Gravel Surface	<ul style="list-style-type: none"> •Third greatest reduction in erosion •Second greatest reduction in sediment delivery. •Third highest risk for toxics (same as RA & RAG) 	Provides year-round, gravel road access. Converts 4 miles of road to trail.	Same as Alt. EA.	High total cost. Highest maintenance and user costs.
RAG Relocate Road- Mix of Asphalt and Gravel Surfaces	<ul style="list-style-type: none"> •Greatest reduction in erosion (same as RA). •Greatest reduction in sediment delivery (same as NAFF, EA & RA) •Third highest risk of toxics (same as RA & RG). 	Provides year-round access on a mix of road surfaces. Closures for safety and spring breakup. Converts 4 miles of road to trail.	Same as Alt. EA.	High total cost. Intermediate maintenance and user costs.

Chapter III

The Affected Environment

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Chapter III

The Affected Environment

Introduction

This chapter profiles the environmental resources that surround the South Fork Salmon River. The resources described include the relevant physical, biological and social environment that could be affected by the implementation of an alternative or those that may help the reader understand the alternatives.

Physical Location and Environmental Attributes

The South Fork Salmon River is on the Payette and Boise National Forests in central Idaho. (See Vicinity Map on inside front cover.)

The South Fork Salmon River has carved a deep canyon through a bedrock formation known as the Idaho Batholith. The Idaho Batholith is characterized as a granitic formation composed mainly of quartz monzonite, with minor amounts of granodiorite and quartz diorite. Glaciers once covered most of the area, forming soils that are coarse textured and extremely erosive.

Cold, moist winters dominate the central Idaho climate. Summers are hot and dry. Average annual precipitation (mostly snow) varies from approximately 20 to 60 inches, depending on the elevation. Rain-on-top-of-snow events occur most commonly below the 5,500 foot elevation.

Elevations in the project area range from 3,663 feet at the East Fork of the South Fork Salmon River junction to 5,195 feet at the junction of the Warm Lake Highway and the South Fork Salmon River Road. The highest point in the tributary watersheds that affect the road is 9,179 feet at Log Mountain.

The South Fork Salmon River Road

The road's condition varies along its entire length. The surface consists primarily of native material. Gravel, chemicals or clay have been added to stabilize some sections. Some road sections are in good condition and are drivable most of the year, while other sections are susceptible to rapid deterioration when wet.

Mining companies use the road seasonally. People also use the road to reach the Yellow Pine area. (The relationship of the South Fork Salmon River Road and access to the Yellow Pine area is discussed in the Environmental Assessment for Interim Management of Winter Access for the South Fork Salmon River Drainage, November 1988; also see

Payette National Forest Plan, pages IV-237-244 and Boise National Forest Plan, pages IV-84-86).

The average traffic count from May to November varies from 30 vehicles per day at the south end of the road to 60 vehicles per day at the north end. According to monitoring done from 1986 to 1988, an average of seven vehicles per day travel the road from December to March. This consists mainly of passenger cars and pickups, with an occasional delivery vehicle. On the average, one minor traffic accident occurs each year.

The objectives of road management are to provide for a reasonable level of public safety, to prevent damage to the road investment, and to protect other resource values. The Forest Plan includes some general road management guidelines, such as vehicle size restrictions, rules on commercial transportation, provisions for cooperative agreements, seasonal use restrictions. (See Forest Plan, pages IV-237-244)

Current Road Condition and Maintenance

Road maintenance is done to provide a safe driving surface. Some road maintenance activities accelerate sedimentation. Typically, ditch lines are cleaned and reshaped, culvert inlets are cleaned, and rocks and excess material are pushed into and over the berm with a road grader. Fines from the ditches are spread on the road surface. Road graders spread slide material on the road if it is mostly sand, and repair slumps or blowouts in the road fill.

While most of the road's maintenance reduces erosion from the road, there are some problems associated with the road and its current maintenance:

- The fine material spread on the road surface from clean-out activities is carried into drainages during the next rain event.
- Ditch cleanout disturbs and reactivates erosion on cut slopes by undercutting the cut slope with the road grader.
- Many culverts are not fully effective due to improper installation or deterioration.
- The road grade is lower in some places and needs to be raised to drain excess water adequately.
- Other water-related problems have caused wet areas on the road and erosion from road runoff onto unprotected soils in some locations.
- When berms are maintained, fine materials are sometimes pushed over the side of the road directly into the river.
- The maintenance of berms sometimes causes over-steepened fill slopes that fail when saturated.

The Social and Economic Setting

There are several groups of people who may be directly or indirectly affected by road management in the drainage. The predominant groups are Yellow Pine landowners and residents, mining company employees and contractors, Native Americans, and recreationists (discussed under the section on recreation).

Yellow Pine Landowners and Residents

Yellow Pine is a remote, backcountry community. Three motorized access routes serve the area: South Fork Salmon River Road, Johnson Creek Road, and Yellow Pine Road. The South Fork Salmon River Road is the preferred winter route because it receives less snow than the other two routes. The other two routes are preferred during other seasons.

Miners and Mining Companies

The recent growth in mining activities in the Stibnite and Thunder Mountain areas has created a new community or group of backcountry residents. Adequate access to the area is important to their jobs and lifestyles.

This group wants year-round access to their place of work. The Johnson Creek Road is the preferred primary access route to the mining areas. The South Fork Salmon River Road is a secondary access route and is used when weather or road surface conditions prevent travel on Johnson Creek Road.

Sportspersons and Environmentalists

This group places a strong emphasis on the amenity values associated with the forest and its resources. Combining sportspersons and environmentalists into one group does not mean that all sportspersons are environmentalists or that all environmentalists are sportspersons. The two groups are combined because they respond similarly to resource issues. They want the assurance that certain resources and conditions will continue to be available as part of their chosen lifestyles.

Native Americans

This group has similar concerns to the preceding group, but they also place a strong emphasis on the spiritual and cultural values of the wild game and fish—values protected by various treaties. Fish, particularly the salmon, remain at the center of their lives, sustaining both the people and their culture.

Winter Access

Historically, snow on the major summits on the Warm Lake Highway that provides access to the area has restricted motorized, wheeled winter access to Yellow Pine. Landowners and residents adapted their lives accordingly. In the last five years the situation changed. Valley County has periodically plowed the Warm Lake Highway, and landowners and residents have become accustomed to year-round, motorized wheeled vehicle access.

A major concern of residents is access for medical needs and emergencies. The nearest hospital and medical facilities are in McCall and Cascade. The closest major medical facilities, using an air evacuation helicopter, are in Boise.

Contacts with the local hospitals and the two local air services that serve the area suggest an average of three winter emergency airlifts per year for the period of 1982 through 1986. This did not change in 1986 when Valley County plowed the South Fork Salmon River Road, nor did it change in the light snow fall year of 1985 when four-wheel-drive

vehicles could drive the unplowed road all winter. Although instrument flying may be successful, occasionally severe weather conditions cause delays in rescue attempts during winter months.

Resource Elements

Those resource elements that could be affected by the road project are discussed below:

Cultural Resources

Introduction

The Forest Plan goals say the Forest will identify and manage significant cultural resources and areas of Native American religious importance (See Payette National Forest Plan, page IV-3 and Boise National Forest Plan, page IV-44). For this project, all cultural resource properties will be protected. The compliance process was followed and reviewed by the State Historic Preservation Office. The Forest informed the Native Americans of the proposed project.

Cultural Resources Along the South Fork Salmon River Road

Forty-one cultural resource properties were located during the 1989 cultural resource inventory of the right-of-way for the South Fork Salmon River Road project.

Evidences of a variety of past and present human activities were recovered. The oldest human activities were prehistoric Native American areas that were used repeatedly over the last 8,000 years. The most recent evidence of Native American activity remaining along the road right-of-way are scars on ponderosa pine trees where Native Americans peeled the bark to reach the inner cambium for food.

Most the reported cultural resources found along the road right-of-way consisted of historic activities. Some of these historic activities have been identified as homesteads associated with ranching, gardening, and apple orchards. Euro-American and Chinese mining activities are present as placer and hard rock mining locations. The Euro-American and Chinese mining activities are identified by the ethnic techniques of mining.

Forest Service and Civilian Conservation Corp activities were evident as ruins and on-going service sites such as the Krassel Work Center. There was at least one Civilian Conservation Corp camp at the Reed Ranch during the middle 1930s. A telephone line interconnected the ranches and administrative sites along the river corridor.

Several bridges and trash dumps are evidence of logging, hunting and fishing camps. Thirty-nine of the 41 cultural resources have had a formal determination of eligibility for listing onto the National Register of Historic Places. Two cultural locations need additional site examination.

Recreation

Introduction

The primary objective of recreation management in the South Fork Salmon River Road

corridor is to maintain the area's high scenic qualities. The road corridor is a Sensitivity Level 1 travel route, foreground retention for visual quality, and a roaded natural setting under the recreational opportunity spectrum (See Payette National Forest Plan, page IV-9-24 and Boise National Forest, page IV-37-38 and Appendix C, for explanations of these designations).

The South Fork Salmon River has been recommended for inclusion into the Wild and Scenic River System. Based on the criteria for Wild and Scenic River classification, the Forest Service expects the section of river in the project area to qualify as a recreation river. A formal Wild and Scenic River classification probably would attract more visitors to the area.

The rivers, streams, lakes, trails, roads, and wildlife attract recreation users to the South Fork Salmon River drainage. The South Fork Salmon River Road provides access to many of these attributes and features.

Recreation Facilities

A limited Forest recreation budget, low to moderate recreation use, and few flat areas suitable for camping result in few recreation facilities in the road corridor. Use of trails and campgrounds in the road corridor is generally highest during big game hunting season. Use of the road for sightseeing occurs primarily in the summer months.

The two developed campgrounds in the road corridor, Buckhorn and Penny, can handle about 100 people.

The Penny Springs Campground has four camp sites with no water or trash pick-up. The campground is on the Boise National Forest, next to the 474A road, approximately 1/4 mile off the South Fork Salmon River Road. The campground currently receives light use because of its isolated location and the lack of any secondary associated activities such as hiking and fishing.

The Buckhorn Campground has several camp sites next to the river, and the remaining camp sites on the other side of the South Fork Road. There is no trash pickup. The campground currently receives light to moderate use. The Forest Service renovated the campground in 1989.

There are two dispersed campgrounds with toilets at Poverty Flat and Four Mile Creek and other dispersed camping areas without developments throughout the drainage. A system of trails is also accessible from the South Fork Road. A complete list of existing and proposed facilities within the project area may be found in Appendix A.

Big Game Hunting

Hunters use many areas along the road. Many hunters use the trailheads in the project area, but hunt in areas outside the project area. The hunters generally seek isolated, dispersed campsites. A few people hunt the area on a day-use basis also. The popular campsites in the project area are along spur roads and trail heads. The area is remote, with rough, steep terrain. It is best travelled by horseback or hiked by conditioned hikers. Outfitters and guides use the road for access to their hunting areas and for hunting bear and mountain lion.

River Access and Use

The current road location provides nearly immediate access to most segments of the South Fork Salmon River. People can drive to most areas of the river.

Fishing and kayaking above the confluence with the East Fork of the South Fork Salmon River (East Fork) are the highest river uses. Presently, the demand for these activities is low. The Idaho Department of Fish and Game restricts fishing to protect westslope cutthroat trout and anadromous fish (See section on Fish below).

Rafting on the river in the project area is extremely rare and restricted to a few short segments less than two to three miles in length. The remaining portion of the river above the confluence with the East Fork of the South Fork Salmon River is unnavigable by raft. Much of the river channel is too narrow, shallow and rocky for rafts.

Kayaking conditions are better than rafting conditions because kayaks can negotiate the rocks more easily than rafts. Although very few people kayak the river presently, kayaking has been increasing in recent years. Kayakers use an eight-mile section from Goat Creek to Poverty Flats Campground. Logs in the river and long, continuous rapids without eddies make the section extremely dangerous. (See Idaho Whitewater by Greg Moore and Don McClaran for a comprehensive description).

To reach the river, rafters and kayakers must climb down steep road fills at some locations. There are no trails or access points for these uses.

Road Use

Approximately 12,500 Recreation Visitor Days (equivalent to one person recreating for 12 hours) were recorded in the road corridor in 1988. This use is low to moderate in relation to the size of the area. The primary uses were pleasure driving and sightseeing. Other recreational activities were secondary. The existing road provides excellent views of the river and is part of two loop roads used by recreationists for touring.

Recreation use on the road occurs mostly in the summer through early winter. Mid-winter access is dependent on snow depth and Valley County's snowplowing program. The Forest Service closes the road frequently during fall and spring wet periods because of muddy conditions. Small trucks and passenger cars are the principal vehicles that use the road. Occasionally, larger mining or service vehicles use the road. Use of the Knox Ranch Road is limited to dry weather during the spring, summer and fall months.

Wildlife

Introduction

Forest Plan goals for wildlife are to maintain elk, Williamson's sapsucker, pileated woodpecker, and increase vesper sparrow (Management Indicator Species). Big game habitat management will be emphasized in the South Fork drainage. Recovery of the wolf is dependent on maintaining an adequate prey base and minimizing human-wolf interactions. Deer and elk habitat will be maintained at high levels in areas with high numbers of wolf observations. Human-wolf encounters will be addressed through access management to minimize potential conflicts (Payette National Forest Plan, page IV-28-33

and Boise National Forest Plan, page IV-457-467)

Wildlife Habitat

The complex topography, elevation and vegetation of the project area provide habitat (food, water, shelter and security) for wintering big game, black bear, mountain lions, small mammals and a variety of bird species. The project area is in Idaho Department of Fish and Game Big Game Management Unit 25. Principal species hunted in the unit are elk, mule deer, black bear, mountain lion, Merriam's turkey, and blue grouse.

Big Game Winter Range

Deer and elk use the river corridor as primary winter range up to the 5,000-foot elevation from the Poverty Flat area north to the East Fork of the South Fork Salmon River. This area encompasses about 20,000 acres. The lower ends of the Johnson Creek and Secesh River drainages provide an additional 2,000 acres of winter range. Mild winters expand and severe winters constrict the area used as winter range.

About two or three winters per decade are severe. During severe winters animals come from all parts of the South Fork Salmon River drainage and as far away as the mouth of the Middle Fork Salmon River and South Fork of the Payette River.

According to Idaho Department of Fish and Game records, about 1,400 elk and 2,400 deer use the upper South Fork Salmon River drainage as winter range. Most congregate long the mainstem South Fork Salmon River.

Black Bear and Mountain Lion

The Idaho Department of Fish and Game regulations permit hunters to use dogs to hunt bear and mountain lions in the project area. Mountain Lion may be killed from the beginning of September to the end of February. Black bears may be killed from the beginning of September to the end of October, and from the beginning of April to the end of June, and pursued only in July and August. These seasons allow nearly continual disturbance of big game winter range for nine months of the year, during the most crucial periods. A winter survey of elk wintering areas in portions of Idaho Game Management Units 25 and 26 found dog tracks covering wintering areas in some locations (See Report on 1989/1990 elk monitoring). This can be a substantial impact on over-wintering game, depending on the number of hunting groups in the area.

Threatened and Endangered Species

The South Fork Salmon River canyon provides habitat for two species of threatened and endangered animals. These include the Northern Rocky Mountain gray wolf and bald eagle.

Northern Rocky Mountain Gray Wolf

The U.S. Fish and Wildlife Service classifies the Northern Rocky Mountain gray wolf as an endangered species. They also identified central Idaho as an area essential to the recovery of the gray wolf in the Northern Rocky Mountain Wolf Recovery Plan. The abundance of reports of wolf activity in the South Fork Salmon River drainage gives basis for the projected presence of four to six wolves in the area.

Chapter III

Bald Eagle

The bald eagle has been observed in the South Fork Salmon River drainage in the winter, but they typically return to nesting sites outside the drainage each spring. Although there have been spring and summer sightings, there are no known nesting sites in the river corridor.

Other Threatened, Endangered, and Sensitive Species

No other threatened or endangered species critical habitat or proposed critical habitat has been identified. The Forest Service has classified the Chinook salmon and steelhead trout (addressed in the fisheries section of this document) as sensitive species. The National Marine Fisheries Service has received a formal petition to review the status of wild runs of spring and summer chinook salmon for potential listing under the Endangered Species Act. No other known sensitive plant or animal species have been identified in the area.

Fish

Introduction

The South Fork Salmon River contains significant habitat for anadromous fish. Excessive sediment deposits have damaged the habitat. The Forest Plan put special emphasis on improving this habitat. The management goal for the South Fork Salmon River drainage is to restore harvestable, robust, self-sustaining populations of naturally reproducing salmon and trout, approaching full productive capacity by the year 2007 (Payette National Forest Plan, page IV-233 and Boise National Forest Plan, page IV-75).

The Payette and Boise Forest Plans outline many projects to reduce sediment in the South Fork, including treatment of the South Fork Road (Payette National Forest Plan, pages IV-233-240, and A-2-3 and Boise National Forest Plan, pages IV-75-83 and A-49).

The South Fork Salmon River Road is next to the South Fork Salmon River and crosses all main tributaries on the east side of the drainage between the Warm Lake Highway and the river's confluence with the East Fork of the South Fork Salmon River. The parallel road course and the road's proximity to the mainstem of the river and its tributaries have a detrimental influence on fish habitat downstream and next to the road.

Fish species in the river include redband/rainbow trout, westslope cutthroat trout, bull trout (Dolly Varden), brook trout, steelhead trout (ocean-run rainbows), chinook salmon, and other non-game species of fish. There are no threatened or endangered fish species in the drainage, although chinook salmon are below historic levels and are being considered under the Endangered Species Act. No formal designation has been made. The Payette Forest Plan Final Environmental Impact Statement (page III-33) and the Boise Forest Plan (pages II-25-28) list redband/rainbow trout, chinook salmon, steelhead trout, westslope cutthroat trout, and bull trout (Dolly Varden) as Management Indicator Species for the South Fork Salmon River. They are all present in areas affected by the South Fork Road. The Idaho Department of Fish and Game lists all but the westslope cutthroat trout as species of special concern. The Forest Service has classified both chinook salmon and steelhead trout as sensitive species in the South Fork drainage (Forest Plan Final Environmental Impact Statement, page III-34).

The South Fork Salmon River and its tributaries contain one of the largest remaining areas in the Columbia River drainage historically used by summer chinook salmon. The South Fork Salmon River is one of only three river systems in the drainage with remain-

ing runs of wild steelhead. These anadromous species are of national significance, providing sport and commercial fishing in the Pacific Ocean and portions of the north-western United States. For thousands of years they have been an important food resource and religious symbol for Native Americans. A more complete narrative concerning fish populations and habitat condition in the South Fork may be found in the Payette Forest Plan FEIS (pages III-31-47 and Appendix D) and the Boise Forest Plan FEIS (page II-23-24).

Sedimentation and Fish Habitat

The upper South Fork Salmon River from Warm Lake Highway to the East Fork of the South Fork confluence contains spawning, rearing, and over-wintering habitat for chinook salmon and steelhead trout. Spawning areas for chinook salmon and steelhead are concentrated in the Poverty, Glory, and Oxbow vicinities, with several smaller spawning areas scattered throughout the project area. Rearing areas for chinook and steelhead, and spawning areas for steelhead are also found in several larger tributaries in the project (See Salmonid Population Study of Seven Tributaries of the South Fork Salmon River, Cascades Environmental Services, 1989)

Sediment has infiltrated or covered most of the gravels historically used for spawning. Although the specific effects of sediment on fish populations in the South Fork are unknown, elevated sediment deposition results in mortality of fish eggs from the effects of scouring and depletion of oxygen, and can trap emergent fry in the gravels where eggs are deposited.

Rearing and over-wintering areas in the South Fork and mainstem tributaries are similarly degraded by sediment. Young fish are dependant upon pools and pockets between rocks and boulders to protect them from predators and to rest from rigors of swimming in fast current. Spaces between rocks and gravel also support many aquatic organisms the fish eat. Sediment has filled many pools and spaces between rocks, eliminating much of the habitat needed by newly emergent fry.

Following steady sediment improvements in the late 1960s and early 1970s, core samples and embeddedness measurements show that there has been no improvement in fine sediment in the South Fork and its tributaries in recent years. The values have fluctuated some from differences in water years and do not represent either an improving or declining trend. (See Embeddedness of Salmonid Habitat of Selected Streams on the Payette National Forest 1987-1988 and the South Fork Salmon River Fisheries Accomplishments and Monitoring Report, Fiscal Year 1989, prepared by the Cascade Ranger District of the Boise National Forest).

The following graphs illustrate the past sediment history in several important spawning areas in the South Fork Salmon River (Figures III-1 and 2). Figure III-1 was developed by Platts and Megahan (1975) on ocular estimates of sediment. After 1975, more precise measurements of the substrate composition were collected by core sampling (Newberry, 1975 and 1990) (Figure III-2). The graphs show that the amount of fine sediment in these areas decreased sharply between 1966 and 1970 and leveled off after the mid-1970s. Additional sediment reduction is needed if the spawning areas are to improve any further.

Figure III-1

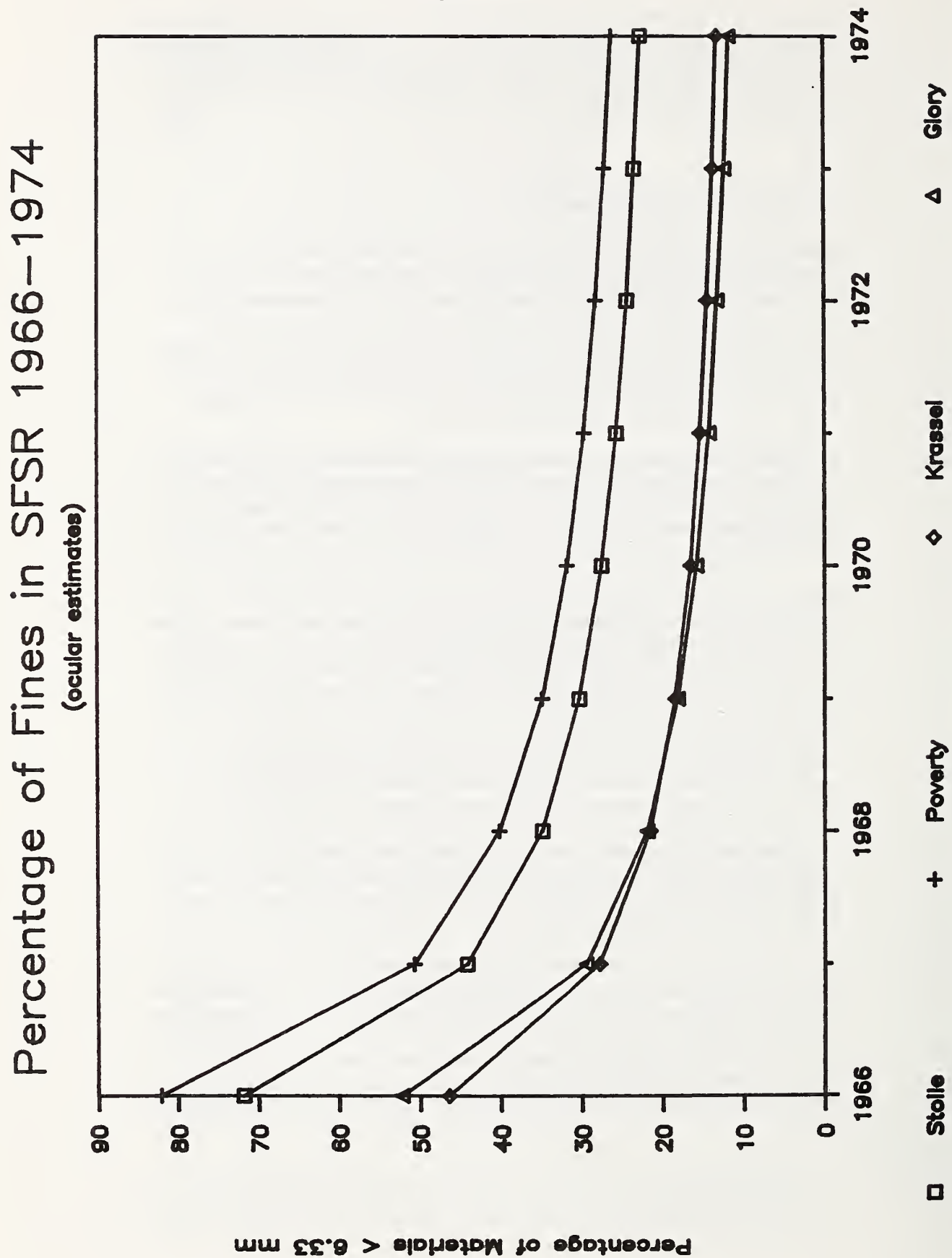
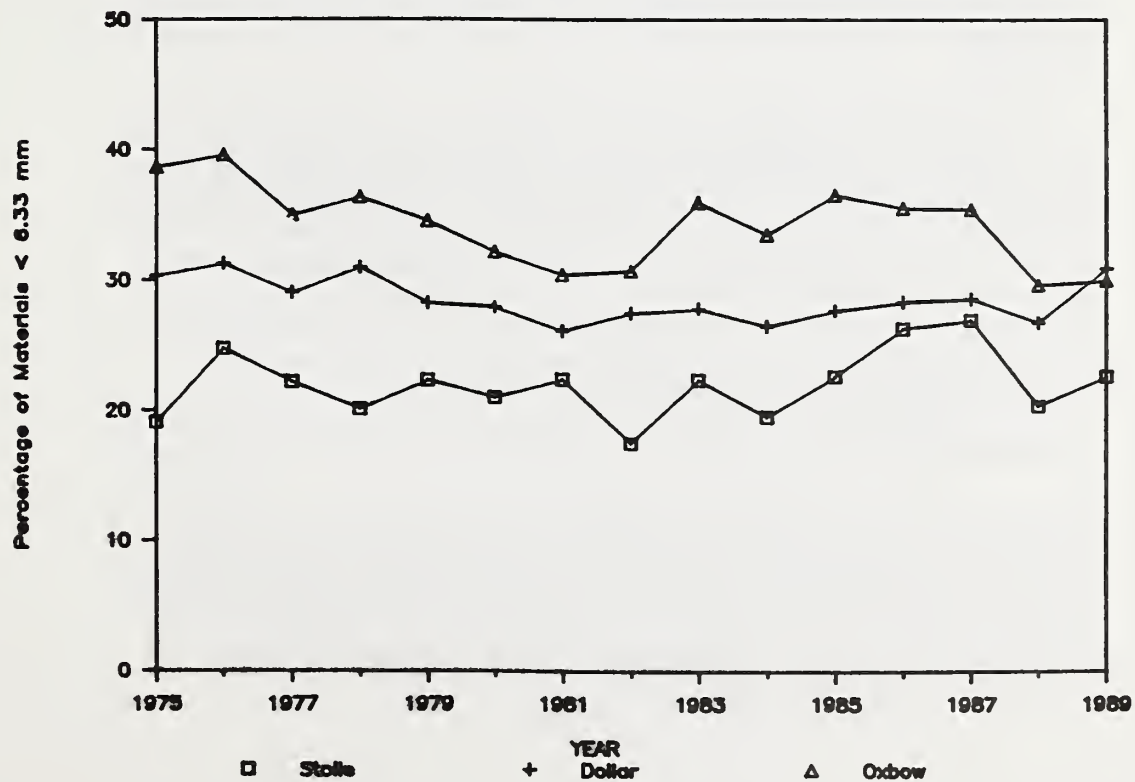
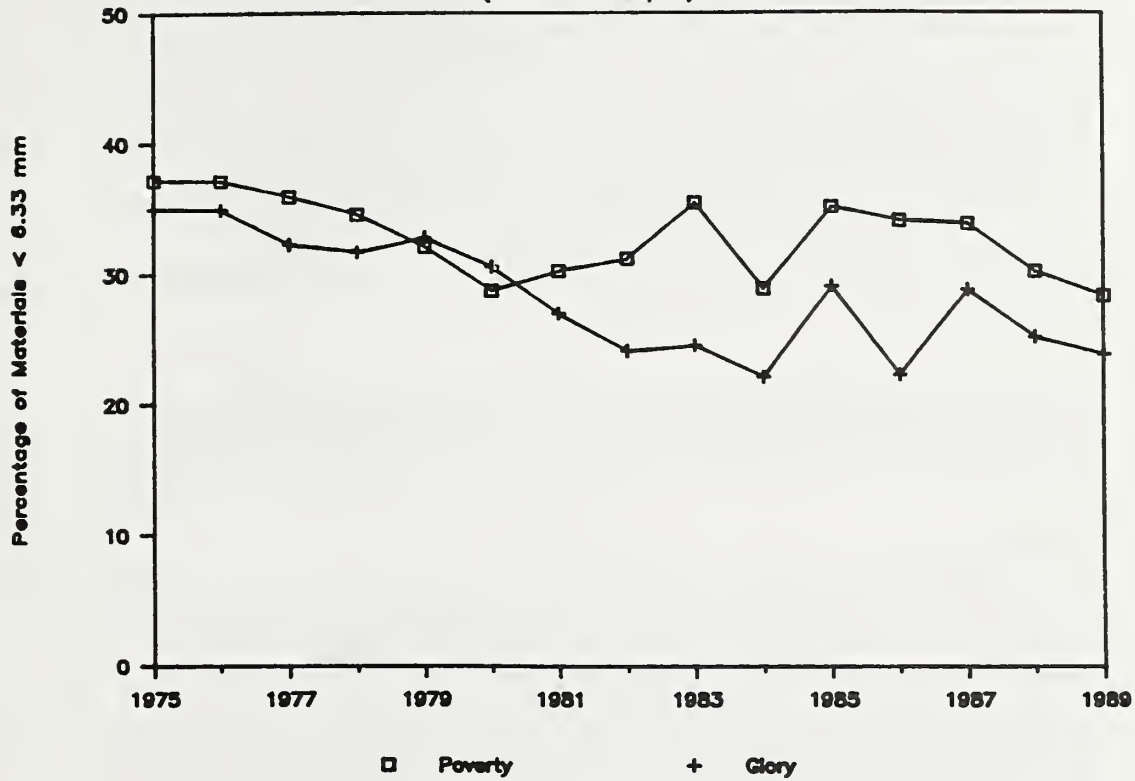


Figure III-2

Percentage of Fines in SFSR 1975-1989

(From core samples)



Access to Fish

In the project area, 13 miles of the South Fork Salmon River Road are less than 100 feet from the river and are easily accessed from the road. Other portions of the river can be reached with a short hike from the road, except a few areas where the river is not visible from the road or where the terrain is extremely steep. Fish populations can be affected by the amount of human access. The effects vary in direct proportion to the mileage of open road near a stream or lake. Roaded access increases the opportunities for contacts between humans and fish. The greatest impacts occur when roaded access is available during fishing season (See Payette National Forest Plan, page IV-47, for discussion on access and fish). Contacts associated with access include sport fishing, poaching, harassment, destruction of redds and spawning areas, and observation. These activities can directly affect fish mortality and fish habitat.

The Idaho Department of Fish and Game has established restrictions on the fishing season to reduce impacts to fish. Presently, there is no fishing season for chinook salmon or steelhead trout in the South Fork. There is a catch and release season for westslope cutthroat trout.

Toxic Spills

The Forest Service does not allow commercial hauling of hazardous materials (except lime and petroleum products) on the South Fork Salmon River Road (See Payette National Forest Plan, pages IV-237-238 and Boise National Forest Plan, page IV-83-84). The Forest Plans define hazardous material as any material that is toxic to living organisms (Payette National Forest Plan, page IV-238). A permit is required to haul the hazardous materials, according to the Rules for Transport of Hazardous Materials by Commercial Users (Forest Plan page IV-242). Compliance is the responsibility of the vehicle operator and is not directly enforced by the Forest Service. Violations are reported to the Valley County Sheriff. There are no special restrictions on non-commercial hauling.

Toxic material spills are possible from the legal commercial hauling of lime and petroleum products, from illegal hauling, and non-commercial use. Spills have occurred on the South Fork Road and other roads in the drainage in recent years (on record at Krassel District Office). Toxic materials can reach the South Fork by spilling directly in the river or through tributaries or drainage structures. Once in the water, toxic materials can kill fish or aquatic insects and other fish foods. Fish are most vulnerable to toxic chemicals at early life stages. The extent of damage to fish habitat from a spill is dependent upon many variables, including stream discharge, season, toxicity of the material, and the amount of material reaching the stream.

Fish Passage

Fish passage is impaired or blocked by culverts in several tributaries to the South Fork Salmon River. The culvert for the South Fork Road at Cabin Creek blocks upstream fish migration into Cabin Creek and Warm Lake from the South Fork Salmon River. This stream presently has rainbow and brook trout, but potentially could support other species if the barrier was removed. The culvert also eliminates access to spawning areas for steelhead and rearing areas for chinook salmon.

The culvert at the mouth of Goat Creek blocks upstream fish migration. This stream is populated by rainbow trout only. An early 1980s' survey recorded an unusual strain of rainbow trout with abnormal fins that was not noted in the 1989 survey (See reference below). Plunge pools, large woody debris, pocket water, and gravel provide good potential habitat for other fish species.

The culvert in Fourmile Creek blocks fish passage under certain flow conditions. Rainbow trout was the only species present in this stream, both above and below the culvert. (See Salmonid Population Study of Seven Tributaries of the South Fork Salmon River, for more detailed description of fish in these tributaries).

Soil and Water

Introduction

The Forest Plan calls for an aggressive program to control existing sources of sediment in the drainage (Payette National Forest Plan, page IV-70) by completing as many sediment-reducing projects as soon as possible (Payette National Forest Plan, page IV-234 and Boise National Forest Plan, page IV-76).

Water quality is dependent on the interaction of plant, soil, and water resources and foreign materials. Water quality determines the stream's ability to support fish populations, aquatic plants and to supply clean water for downstream uses.

Water quality in the South Fork Salmon River has been impaired by extreme watershed erosion and subsequent sedimentation into the river and its tributaries (See discussion on Sediment and Fish above and Payette National Forest Plan FEIS, Appendix D, for the history of the South Fork Salmon River). The effect of erosion on anadromous fish habitat is the most important consideration in making land management decisions in the drainage.

The tributary watersheds in the surrounding area directly influence the characteristics of the South Fork Salmon River in the project area. This zone of influence is described as the area that bounds the east side of the river to the ridgeline and from Warm Lake Highway to the East Fork of the South Fork Salmon River. This area is used in the soil and water analysis to assess the magnitude of risk at stream crossings from large storms and to determine the effects the road has on the tributary and river systems.

Soil Resources

The soils in the South Fork Salmon River are derived from the Idaho Batholith. They erode easily on steep slopes and have a high rate of permeability. Some soils have a high hazard landtype classification for erosion and sedimentation (See the Forest Plan FEIS, page III-64).

An order one soil survey was completed for the project area. Twelve soils were classified for the area. These soils range from wet organic riparian soils to shallow erosive soils

with slopes of 60-90 percent on dry south-facing slopes. (Associated Earth Sciences, 1989).

The natural and human-caused erosion in the drainage reflects the fragile nature of the soils in the area. Erosion is detrimental to site productivity, vegetative stability and water quality. The erosivity of the soils in the project area ranges from none to very severe sheet erosion (Associated Earth Sciences, 1989).

Erosion and Sediment Transport

The sediment deposited in the South Fork Salmon River and its effect on fish is the primary concern for the proposed road project. Large amounts of sediment are stored in the stream channels, hillslopes, and floodplains in the watershed. The sediment is moved by high water flow events. Extreme storm events have triggered surface and mass erosion in the watershed. The erosion was accelerated by man-caused land disturbance in the area. Mining, timber harvest, roads, and grazing have reduced or eliminated protective vegetative cover, limiting the watershed's ability to withstand large storms.

Mass wasting, such as debris flows, has deposited the largest amount of sediment into the streams in the South Fork Salmon River system. Mass wasting occurs infrequently and is induced by large precipitation events. The frequency is determined by the soil type, geology, slope, vegetation, and water content of the soil. Human activity in the drainage has acted as a catalyst or destabilizing force, which has brought on debris flows throughout the basin.

The eroded material from past storms was deposited as sediment into the tributaries and the South Fork Salmon River, damaging nationally significant fish habitat. The South Fork Road was identified in the Forest Plan analysis to be one of the single, largest human-caused sediment sources remaining in the drainage that could be controlled effectively.

The slope along the South Fork Road ranges from flat to steep terrain. Flat terrain produces little or no sediment because it provides less energy to the water to carry sediment. Steep terrain provides the water energy to carry sediment.

The amount of sediment contributed to the river from runoff is determined by the timing, intensity and duration of precipitation events, condition of the soil, vegetative cover, and the amount of stored sediment on the hillslopes and in tributary channels.

Sedimentation of the river occurs periodically from large storm events and in more moderate amounts from smaller storms and spring snowmelt. Records show that the probability of a damaging rain-on-top-of-snow event in the drainage is about 15 percent annually and is most likely to occur between November and April.

Historically, sediment levels in the river increased because the amount of sediment reaching the South Fork Salmon River exceeded the river's ability to carry it out of the system. The excess material was deposited and stored throughout the system. The river has reached a delicate equilibrium where it can move the annual sediment load but cannot move any of the stored material. This balance just maintains the current deteriorated habitat. No improvement is expected unless the annual sediment load is reduced enough to begin moving the stored sediment. Reduced sediment delivery from the South Fork Road would contribute to the reduction of the annual sediment load, which would increase the amount of stream energy that is available to move stored sediment.

Sediment from the road prism can be reduced by preventing erosion and controlling sediment delivery. Erosion and sediment come from unstable road cut and fill slopes, drainage ditches and the road surface. The sediment produced from the road reaches the river in varying time frames depending on the distance from the river and the amount of material stored in the system. Stored sediment in the river could be removed directly in some locations.

Water Quality

Water run-off in the South Fork Salmon River is derived primarily from snowmelt and provides a variety of uses for the environment and humans. The primary beneficial use in the South Fork Salmon River is anadromous fish. Other beneficial uses of the river are for wildlife and recreation and good quality water.

The Idaho Department of Health and Welfare, Department of Environmental Quality, has listed the South Fork Salmon River as a "Water Quality Limited Segment" under the Clean Water Act. Streams that have impaired water quality are listed and should not be further degraded by the pollutant (antidegradation policy). The pollutant identified for the South Fork Salmon River is sediment.

In addition, the State of Idaho has classified the river as a "Stream Segment of Concern." This classification is used for streams that need special protection to maintain their beneficial uses. The South Fork Salmon River's most impaired beneficial use is the habitat for summer chinook salmon.

The two programs assist in protecting the water quality of the river. Limitations on activities that would further degrade the South Fork Salmon River and the use of Best Management Practices (BMPs) for all activities help meet the intent of these policies. Recent activities in the watershed have included extraordinary steps to ensure no further harm comes to the water quality and the anadromous fish habitat of the river.

Fire Effects on Soil and Water

The wildfires of 1989 in the South Fork Salmon River drainage increased the erosion rate. About 35,000 acres were burned in South Fork drainage. The fires included all or portions of Knox/Lunch, Bear Creek, Yellow Jacket, and Foolhen Complex. The largest was the Foolhen Complex, located west of the South Fork Salmon River from the Dollar Creek drainage, extending north to the Blackmare Creek drainage.

Most burn activity was patchy and of low to moderate intensity, resulting in little soil damage. However, two burned areas present high potential for increased surface erosion and mass movement. They are 135 acres of high intensity burn scattered in the headwaters of Dollar Creek and several hundred acres of moderate intensity burn on a steep face along the South Fork Salmon River.

Approximately 2.5 miles of fireline were constructed up the slope from the South Fork Salmon River at the south end of the Dollar Creek Fire near the Goat Creek confluence and on the north end of the fire near the large oxbow at the old Poverty Burn. About 25 miles of fireline were constructed in the South Fork drainage in the Foolhen Complex

(which includes the Dollar Creek Fire).

About 3 miles of closed roads were reopened for fire suppression; 2 miles of Road 259B in the Dollar Creek system and one mile near the Poverty overlook. Both roads were reclosed.

Some fire effects were mitigated. Firelines and opened roads were waterbarred and seeded with grass. (Portions of firelines at higher elevations were not seeded due to a lack of soils sufficient for germination). Logs were dropped along the South Fork and in other areas to slow soil movement. Logs dropped into the South Fork Salmon River were later cabled to stumps for use as cover for fish. The steep face along the South Fork was aerially seeded and fertilized. (For more information on the 1989 wildfires, see the FEIS for the Warm Lake Complex Fire Recovery Project, Boise National Forest.)

Riparian Areas

Introduction

Riparian areas are defined as areas with soil, water and vegetation characteristics requiring abundant available water for part of the year. They are most commonly found next to surface water, such as lakes, perennial streams, and most intermittent streams, wet meadows, springs, seeps and bogs. In addition, there are definable resources that owe their existence to riparian areas and are classified as riparian-dependent resources.

Riparian Resources

The Forest Plan direction for riparian areas calls for protection of those areas that are presently in good condition and, where possible, improvement of areas that are degraded (Payette National Forest Plan, page IV-91 and Boise National Forest Plan, page IV-9).

Riparian areas in the project area occur along the South Fork Salmon River; along tributaries to the river, seeps and springs along the proposed road route, and wet meadows located mostly at the south end of the project on the Boise National Forest. Most of the riparian areas are limited in size because the hillslopes are extremely steep and well drained. Historical activities (such as mining, timber harvest, grazing, introduction of exotic plant species, and construction of roads and recreational facilities) along the South Fork Salmon River have further reduced the extent of riparian areas and have contributed to localized reduction of wetlands and riparian areas. Consequently, these small remaining areas do not support the diverse plant and animal communities that are typically found in larger, more cohesive riparian environments.

The South Fork Road encroaches on riparian areas at many stream crossings and where the road is next to the river. Riparian-dependent resources include plant and wildlife species that require abundant water, high soil moisture or certain water-dependent plant species for some part of their life. Where the road prism or other facilities have encroached on riparian areas, plant species have been replaced by species more tolerant to dryer conditions or are void of vegetation.

Many camping areas in the drainage are along the South Fork Salmon River and are located in most of the large flat areas that exist along the river. Large flat areas usually

The Affected Environment

have the most extensive riparian areas. These facilities change the condition of these riparian areas to provide access and desirable camping spots for Forest visitors. They have altered the character of these areas and can degrade water quality when erosion and sedimentation occurs from them.

The current condition of the riparian areas in the South Fork Salmon River is much below natural potential. Activities in the future should be managed and limited to projects aimed at enhancing the remaining riparian community in the watershed.

Floodplain and Wetlands Analysis

Conditions in the riparian areas are tied to seasonal flooding and any extreme precipitation events that occur. The fluctuation of water levels is the lifeblood of the water-dependent species in riparian areas. Riparian area condition in the project area varies from excellent to highly impacted.

All activities in riparian areas will adhere to Executive Orders 11988, 11990 (Payette National Forest Plan IV-96). Existing facilities in the 100-year floodplain are road prism, campgrounds (dispersed and developed), and access trails and roads.

Chapter IV

The Environmental Consequences

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Chapter IV

The Environmental Consequences

Introduction

This chapter provides the scientific and analytic basis for the comparison of the alternatives described in Chapter II. The consequences of implementing each alternative are described in terms of the possible environmental and social changes that would occur.

Social Setting

A social analysis that considered the effects of the various road management strategies on the identified groups of people was completed. The methodology used consistent with the Forest Plan's FEIS determining the social impacts of resource management decisions. Refer to the Payette National Forest FEIS, Chapter IV, Pp. 116-118, and Appendix B, Section X, Pp. 19-28 and Interim Management of Winter Access in the South Fork Salmon River Drainage Environmental Assessment, Situation Assessment and Environmental Consequences chapters.

Yellow Pine Landowners and Residents

Many people in this group (including Yellow Pine merchants) feel they have a right to unrestricted road access to and from the Yellow Pine area. They want the assurance of knowing that this right is available on a year round basis, as well as year to year, allowing them to enjoy fully, their property and practice their chosen lifestyle. They also appreciate the area's resource and amenity values and do not perceive a conflict between these values and access management.

The Winter Access Options within Alternatives NA, EA, EG, RA, RG and RAG define the degree of acceptance this group has to an alternative. Those options that are less restrictive on access or increase the probability of daily road use are the most desirable, i.e., Winter Access Option 3 is more acceptable than Option 2, with Option 1 being least acceptable. Of all the alternatives and options, Alternative No Action Forest Plan (NAFP) direction, which converts the existing South Fork Salmon River Road to a trail is totally unacceptable to this group.

Winter Access

Winter Access Option 1, which precludes all wheeled, motorized access over the South Fork Salmon River Road during the winter months (January - March) is unacceptable to this group. This option forces them to use snowmobiles over either the South Fork Road, the Johnson Creek route or to use air transportation, the latter of which can be costly and is restricted to daylight hours and favorable weather conditions. Snowmobile use over

Chapter IV

the Johnson Creek route can be extremely hazardous. This option is also not acceptable to the group because of the burden it imposes on the medical and emergency needs of these people.

Winter Access Option 2 allows South Fork Salmon River Road access two days per week for all acceptable vehicles. This option is viewed by the group as a marginal improvement over Option 1, but is still not acceptable because it restricts access to only two days per week. This option is also unacceptable because it does not allow for the untimely occurrence of the group's medical and emergency needs.

Winter Access Option 3 provides motorized access seven days a week. Option 3 is the most desirable because it permits year-round access and follows this group's preferred route of travel—the South Fork Salmon River route. This option also would provide the best opportunity for medical and emergency needs.

With regard to emergencies, access is dependent on available road access, snowmobile routes to Cascade or McCall, or through the air route. All action alternatives and Winter Access Options, except Option 1, permit plowed access via the South Fork Salmon River Road for emergency use. Snowmobiles are also available. Travel via this mode is less convenient, but travel time is similar to wheeled, motorized access. For medical emergencies, all alternatives and/or options allow for air evacuation, which has been the most common means in the past. Fixed wing aircraft are readily available during daylight hours and favorable weather conditions. Life Flight from Boise is only restricted by unfavorable weather and nights, with a heavy cloud cover or less than 50 percent moon.

The Yellow Pine merchants share many of the same concerns as those expressed by the other residents. They also realize the historic and potential value of winter recreation, particularly snowmobilers, to their businesses. The economic influence of snowmobilers on the Yellow Pine community has been significant. From the perspective of some merchants, the recent maintenance of winter road access to and from the community has been a major factor in the decline of snowmobile use in the area, and they are concerned with the effect this has on their ability to maintain their businesses and associated livelihood and lifestyle on a year round basis. However, most merchants realize the business potential associated with an increased recreation diversity that unrestricted access could provide.

Miners and Mining Companies

Self-sufficiency and freedom from outside interference are important to this group. They favor a rural lifestyle, while maintaining a high degree of independence. They view water availability and quality as an important natural resource. Minerals, and the availability of that resource, are of paramount concern and importance to miners.

This group's winter access management concerns are similar to the preceding group. However, the mines regard the South Fork Salmon River Road as a secondary winter access route, while the Yellow Pine residents view it as the primary winter access route. The Winter Access Option also defines the degree of acceptance this group has to the alternative. Alternatives NA, EA, EG, RA, RG and RAG with Winter Access Options 2 and 3 permit winter travel and are therefore acceptable by this group. The NAFFP direction Alternative, and Winter Access Option 1 within all alternatives is unacceptable to this group because it would preclude the secondary access route into the area.

Winter Access

Winter Access Option 1 with Alternatives NA, EA, EG, RA, RG and RAG are all unacceptable to this group because they would preclude the secondary access route into the area.

Winter Access Option 2 is also unacceptable to this group because the restricted access does not provide adequate flexibility for medical needs and shift changes of mine personnel. This option is also unacceptable because it does not allow for the untimely occurrence of medical and emergency needs. The unpredictable weather conditions that frequent the area also have a negative effect on the adequacy of two days per week unrestricted access.

Winter Access Option 3 is acceptable to this group because it allows unrestricted use of their defined secondary access route, the South Fork Salmon River Road. This option is desirable to the group because it provides the needed flexibility for emergency needs and shift changes of winter personnel. Impacts of road closures associated with weather conditions and road surface problems are also reduced with this option.

Sportspersons and Environmentalists

This group places a strong emphasis on the amenity values associated with the hunting and fishing experience, and the emotional attachment people have for the forest and its resources. They want the assurance of knowing that certain resources and conditions can be counted on as part of their chosen lifestyle.

Winter Access Options 2 and 3, within Alternatives NA, EA, EG, RA, RG and RAG all pose the greatest risk to fish, wildlife or other resource values, are the least desirable. Of the alternatives, NAFP direction, affords the most assurance of protecting and maintaining or improving current resource conditions in the entire area. Winter Access Option 1, within all alternatives, also affords assurance of resource protection or improvement and is therefore acceptable to this group.

Winter Access

Option 1 is the most acceptable of the Winter Access Management Options because it reduces risks to critical resource values in the upper South Fork Salmon River drainage.

Options 2 and 3, which permit plowing and access along the South Fork Salmon River Road, present the greatest concern to sportspersons and environmentalists. Hunters who use the road for access to their preferred areas are exceptions to this concern.

Native Americans

This group has concerns similar to the preceding group, but also places a strong emphasis on the spiritual and cultural value of the wild game and fish; values that are protected by various Indian Treaties. Fish, particularly the salmon, remain at the center of their life, sustaining both the people and the culture.

Alternatives NA, EA, EG, RA, RG and RAG with Winter Access Options 2 and 3 all pose about the same relative degree of threat to critical spawning and rearing habitat for chinook salmon, and present the greatest concern to downstream Indian tribes and their traditional lifestyle. It is not the permitted travel which is threatening to the habitat but the continuous snow removal from the road that is permitted with Options 2 and 3. Alternatives NA, EA, EG, RA, RG and RAG with Winter Access Option 1 poses less threat to the spawning and rearing habitat than do Winter Access Options 2 and 3 with

these same alternatives. As was the case with the sportspersons and environmentalists group, the NAFP direction Alternative affords the most assurance of protecting these values.

Winter Access

Winter Access Option 1, which restricts winter access in the upper South Fork Salmon River, is the most acceptable to this group because it reduces risks to critical resource values.

As was the case with the sportspersons and the environmentalists group, Options 2 and 3 are the least acceptable to the Native Americans group because plowing and winter access is allowed along the South Fork Salmon River Road.

Cost Analysis

The costs of maintenance, construction, and user costs are used to compare the alternatives in the 40-year Life-cycle Cost Analysis in Appendix F. Maintenance and construction costs are the investments required for the initial construction, and projected expenses needed for replacement and rehabilitation during the 40-year life of the road. User costs are the expenses incurred by individuals operating a vehicle on the road. Design characteristics such as uphill and downhill grade, road width, surface materials, etc. influence the costs to the user in time and money. There are substantial differences in the user costs associated with each alternative. User cost has the most effect of those who frequently use the road.

The no action alternatives (NA and NAFP) have the lowest total cost for construction and maintenance, and the highest cost advantage when user costs are considered (Table IV-1). All other Alternatives (EG, RAG, EA, RA, and RG) are nearly \$5 million higher than the no action alternatives for construction and maintenance costs, and life-cycle cost advantage. Alternative EA has the highest life-cycle advantage of the action alternatives, with a rank of 3, and Alternatives RA, RAG, EG, and RG decreasing in rank (Table IV-1).

Table IV-1
Life-Cycle Cost by Alternative
(1989 Dollars)

Cost Elements	NAFP	EG	RAG	NA	EA	RA	RG
Construction/ Maintenance	3,560,000	8,260,000	8,780,000	2,590,000	8,700,000	8,830,000	8,390,000
User Cost	750,000	1,500,000	920,000	1,740,000	820,000	820,000	1,500,000
Total Life- Cycle Cost	4,310,000	9,760,000	9,700,000	4,280,000	9,520,000	9,650,000	9,890,000
Advantage	0	-5,450,000	-5,390,000	+30,000	-5,210,000	-5,340,000	-5,580,000
Rank	(2)	(6)	(5)	(1)	(3)	(4)	(7)

Resource Elements

Cultural Resources

The goals of the Forest Plan state that we will identify and manage significant cultural resources and areas of Native American religious importance (Forest Plan, page IV-3). For this project, all cultural resource properties would be protected, except for instances that might occur where a site could be accidentally disturbed before cultural resources were identified. The cultural resource inventory for all alternatives has been completed, and cultural resources were recorded. All the Idaho Native American Tribes were contacted and informed of the proposed activities, and the Forest has received no comments from the Tribes concerning cultural resources.

The proximity of the cultural resources to the right of way is most often direct. In places, the road divides cultural resource properties. However, road improvements would mostly take place within the existing road prism and impacts to cultural resources within that area are unlikely. Staging areas for the construction equipment would be designated to avoid impacts to cultural resources. Gravel quarry and rock crushing locations would be examined for cultural resource prior to construction. One or two archaeologists would monitor all activities during all phases of the construction to make certain that cultural resources will not be damaged.

Impacts to cultural resources would be similar for all alternatives, except for Alternative NA. In this alternative, there would be no disturbance or recovery of cultural sites. For Alternatives NAFF, EG, EA, RG, RA, and RAG, direct environmental effects due to construction are not likely to occur. However, if a cultural resource cannot be avoided from impacts, mitigation measures will be undertaken following the Secretary of the Interior's guidelines for data recovery and/or mitigation. The contractor then would be required to avoid further disturbance to the cultural resource, until that resource is evaluated and receives proper attention by the archeologist. Recommendations would include further avoidance and disturbance of the site until the resource can receive proper archeological treatment.

Indirect Effects

Indirect effects are similar for all alternatives, and could occur if a buried prehistoric Native American activity area is discovered during or after initial road construction. In this case, a cultural resource specialist will investigate the cultural resource, determine eligibility and provide management recommendations accordingly. Mitigation may become necessary and funding would be planned to undertake the proper treatment for that cultural resource.

Recreation

Recreation Users and Experiences

Recreation users are attracted to the South Fork Salmon River Drainage by its scenic qualities and near-natural environment. The road itself provides an enjoyable semi-primitive driving experience. Many streams, lakes, rivers, trails, and wildlife are attractions reached by the South Fork Road. Each alternative would affect recreation use in a

slightly different manner. The principle changes would be in the type of recreational use and experience level, and in the number of people using the drainage.

Alternative NAFP would change the user experience to a more natural and primitive condition than is found presently. However, there would still be roaded access to much of the South Fork from both the Warm Lake area and the East Fork Road. Eighteen miles of new trail along the river would be created with roaded access in the vicinities of Cabin Creek, Dollar Creek Bridge, and Jakie Creek. Approximately 16 miles of the South Fork Road would remain. Opportunities for recreation users who desire primitive conditions would improve, while opportunities for those who desire roaded or motorized recreation would decrease. Recreational use of the drainage would increase at the slowest rate of all the alternatives. Closure of the South Fork Road would preclude its use as a scenic loop drive from Warm Lake to McCall via the Lick Creek Road.

Alternatives NA, EG, and RG would have little or no change on the rate of increase in recreation use, or in the semi-primitive character. Now, approximately 10 miles of the existing road is gravel, and the driving condition and appearance is not appreciably different from the native surface. Although gravel would reduce sediment in Alternatives EG and RG, the surface would not improve for driving. Conditions would often be rough, dusty, and bumpy. This could discourage use by certain people. For Alternatives EG and RG, general recreation use in the river corridor could increase during the first one to three years by as much as 4 to 7 percent, because of the perception of greatly improved access and public curiosity. After that, the expected increase would taper off to the Forest average of 1.5 to 2 percent per year.

Alternatives EA and RA would have the largest potential for changes in type of experience and use, and in increased rate of use. The asphalt road surface would improve driving conditions more than Alternatives NAFP, NA, EG, RG, and RAG. However, only the surface would improve; the road would remain as narrow and winding as it is presently. Travel time would not increase appreciably, except during wet conditions since asphalt would eliminate muddy conditions. Some scenic value and character of the drainage could be diminished or lost by replacing the gravel and native surface material with asphalt. Opportunities for recreation users who are attracted to the drainage for its semi-natural condition will decrease in Alternatives EA and RA, while opportunities will increase for users who desire more developed facilities. Some current users will be displaced and relocate to areas where they can have a less crowded and undeveloped experience. General recreation use in the river corridor could increase during the first one to three years by as much as 4 to 7 percent above the existing use, because of the improved road surface and public curiosity. After that it is expected the increase in use would taper off to the Forest average of 1.5 to 2 percent per year, with slightly higher use than expected for Alternatives NAFP, NA, EG, RG, and RAG.

Alternative RAG would have approximately 3.6 miles of gravel on the south end of the road, with the remaining length asphalt. In most respects, this alternative would be similar to Alternatives RA and EA because 27 miles of the road would be paved. The 3.6 miles of gravel would be located on a mid-slope bench away from the river with a limited view of the drainage. All remaining portions of road, where there is a view, would be asphalt and have the same effect on user experience as found in Alternatives RA and EA. The gravel may discourage some individuals, and could potentially reduce the rate of use. Overall, the rate of use would be higher than Alternatives NAFP, NA, EG, RG, and RAG, but less than Alternatives EA and RA.

Facilities

Due to current low to moderate use, recreation support facilities, such as developed campgrounds and parking areas are limited. Existing undeveloped sites may experience increased pressure. As people search for places to recreate, there will be increased impacts to the area from camping, parking and uncontrolled use. New sites will appear as existing sites are degraded or are unavailable for use. Without parking or vehicle controls, the impact on the physical resource may increase, and sediment introduction from recreation activities could increase. This can be mitigated by instituting controls, providing adequate parking areas (Appendix A) and protecting the access routes to desirable recreation areas.

Large increases in the level of use could eventually exceed the present capacity. However, the recreation user's experience should not deteriorate for some time (20 Years) if development and funding keep pace with increased use. Some of the recreation facilities in Appendix A would be constructed, depending on the alternative selected and the amount of funding available (the priority for funding is on sediment reduction). At a minimum, parking areas would be designated to accommodate increases in use.

For Alternative NAFP, the new trail between Cabin Creek and the Reed ranch would require maintenance and development of trailheads. Along with new trailheads, the existing facilities would likely exceed the demand for the near future.

In Alternatives EA, RA, and RAG, the use of the developed campgrounds and other potential dispersed sites would increase slightly during the summer season. The increase in use would require some mitigation in the level of service and control (Appendix A) to preserve some of the semi-primitive character and provide a quality recreation experience. This would include improved maintenance at campgrounds, and patrol and cleanup of dispersed areas. Funding for these mitigation activities is not included in this project, and would be contingent on yearly funding levels. The new users might expect a higher level of facilities and services than currently exists, consistent with the type of road surface.

In Alternatives NA, EG, RG, the demand for facilities would likely increase at nearly the same rate as present. Existing facilities could accommodate these increases for the near future. There would be some discomfort experienced at camping sites near the South Fork Road from the dust created by traffic.

Winter Access

The three winter management options would have the same effects for all alternatives except Alternative NAFP. For this alternative there would be no snow removal on the roaded portions. On the 18 miles of trail and the surrounding area, all activities would be restricted to non-motorized. This would nearly eliminate snowmobile use. Winter activities would include skiing and snowshoes, except in winters with low snowfall. Lion hunting probably would decrease from the reduction in access.

Option 1 would prohibit snow removal and wheeled, motorized access during the winter for Alternatives NA, EA, EG, RA, RG, and RAG. There would be a loss of lion hunter access to the lower reaches of the SFSR by vehicle. As a result, hunting levels would be expected to drop. Antler collectors and other users would have to modify or delay vehicle access into the area until late spring when the road would become available for travel.

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The South Fork Road could be used by snowmobiles, unless restrictions were imposed for wildlife mitigation.

Option 2 would allow snow removal and wheeled, motorized travel 2 days per week during the winter for Alternatives NA, EA, EG, RA, RG, and RAG. There would be a significant consequence for lion hunters, antler collectors, and other users seeking vehicle access. Lion hunting could drop significantly, and snowmobile use would be eliminated as a result of snow removal.

Option 3 would allow snow removal and wheeled, motorized travel 7 days per week during the winter for Alternatives NA, EA, EG, RA, RG, and RAG. All users could use the road for desired purposes without giving any special consideration to timing. This would be particularly important to spring mountain lion hunters, antler collectors, and other users seeking vehicle access. Snowmobile use would be eliminated as a result of snow removal.

River Access and Use

For all alternatives, the demand for river access and use of the river is not likely to increase over the present growth rate, unless the fish populations recover and fishing regulations change to permit taking salmon or steelhead. If this occurs, there would be substantial differences in the effects of the alternatives on the demand for river access and use.

The largest difference would occur if Alternative NAFP was implemented and fishing was reestablished. Roaded access adjacent to the river (where the river is visible and close to the road) would decrease from approximately 25 miles to 11 miles. The flat, open areas at Poverty Flats would be accessible by trail only, which could result in overcrowding of fishing areas near the road. People seeking to enjoy or use the immediate environment surrounding the South Fork Road would have reduced access to the river.

Alternatives NA, EA, and EG would provide the greatest amount of roaded access to the river. There would be no opportunities for trail use adjacent to the river. Fishing areas would be more dispersed than Alternatives NAFP, RA, RG, and RAG.

Access opportunities would be the same for all other alternatives (RA, RG, and RAG). Roaded access would be reduced by approximately 4 miles in comparison to Alternatives NA, EA, and EG. Four miles of trail access would be created. Alternatives RA, RG, and RAG would provide the widest diversity of recreational access, having both trail and road access.

The use of the river above the confluence with the East Fork of the South Fork Salmon River for rafting or kayaking is not likely to change from the existing trend under Alternatives NA, EA, EG, RA, RG, and RAG, but would likely decrease if NAFP were implemented, since access to navigable sections would be more difficult. The demand for rafting and kayaking is limited by the difficulty of navigating the upper South Fork Salmon River. Flows sufficient for rafting are rare, and flows suitable for kayaking long stretches are restricted to late spring and early summer. Kayaking the upper South Fork requires an expert skill level, and can be very dangerous due to steep drops and logs spanning the river. Many kayakers avoid the upper South Fork, and would continue to avoid this section if access were improved.

Rafting and kayaking use on the South Fork is more popular outside the project area, below the confluence with the Secesh River and the South Fork Salmon River. In comparison to Alternatives NA, RG, and EG, Alternatives RA, EA, and RAG would reduce the travel time to the put-in at the confluence of the two rivers by a few minutes, but none of these alternatives would be likely to have much effect on use levels. Alternative NAFP would eliminate access to the put-in area from the South Fork Road, but the Johnson Creek Road and Lick Creek Road would still be available.

Wildlife

Access Management as it Affects Wildlife

Access into an area can effect wildlife populations and their habitat directly or indirectly by increasing or decreasing potential for contacts between humans and wildlife. The degree of effect is related to relative access provided and timing of the access as it pertains to wildlife requirements.

During late spring, summer, and fall, road use and activities associated with road use have relatively an insignificant effect on mule deer, elk and associated species such as mountain lions. These animals are not dependent on habitat in the immediate road corridor during these times of the year.

In winter and early spring, road use and activities associated with road use can have a significant effect, although not always an apparent affect on wintering big game animals. Availability of adequate winter range is often the limiting factor for deer and elk populations in Idaho. There are approximately 30 square miles of big game winter range habitat in the drainage that are used by about 2,400 deer and 1,400 elk. Twenty square miles of the most important habitat is affected by travel on the South Fork Salmon River Road.

Winter forage is usually adequate for animal maintenance and allows survival of winter conditions. When winters are extreme, availability of food supplies is limited for big game. Further reductions in availability of the forage base for big game can be critical. Human disturbance, motorized access and activity on the winter range relating to mountain lion and bear hunting, can reduce elk use along open-road corridors and areas of winter range, further limiting the amount of available forage.

The effects of human disturbance may cause deer and elk to withdraw from preferred habitat and concentrate in smaller, less favorable forage areas. This impacts all animals, but first affects the old, young, and the unborn. Potential losses of young and unborn animals can, under some conditions, change population dynamics undesirably. In the case of the winter range along the South Fork, the primary sites are not immediately adjacent to the river but are located upslope from the drainage bottom. This is due in part to cold air flow near the drainage bottom. Air temperatures are somewhat warmer on the middle and upper slopes of the winter range.

Road access to winter range may increase the potential for illegal harvest. Alternatives that most reduce the effect of motorized and associated access effects would provide for the greatest retention of available habitat for deer and elk populations.

Deer and Elk

The quality of habitat utilized during winter could, at current population levels for mule deer and elk, be adversely affected by any increase in human disturbance. However, potential impacts can be offset by mitigation and should not prevent attainment of the management objectives for these species.

Alternative NAFP would result in the least risk of adverse impacts to mule deer and elk from access. The total length of the road would be reduced to 16.3 miles, with approximately 18 miles of eliminated road replaced with trail access.

In all other alternatives (NA, EA, EG, RA, RG, and RAG), roaded access from the South Fork Road would be approximately 31 miles. These six alternatives would have the same potential to cause more disturbance to game from improved access and additional traffic, than would Alternative NAFP. The amount of disturbance would likely be the highest for Alternatives EA and RA as improvement could attract additional traffic. The additional 3.6 miles of trail access would be added in Alternatives RA, RG, and RAG would have only minor effects on game animals.

Winter Access

Winter management options could affect the number of contacts between humans and wintering big game, but the overall impact for all options would not differ greatly. Access Option 1 would have the least affect due to the closure, Access Option 2 would have an intermediate level of affect and Access Option 3 would have the greatest affect.

The road closure in Option 1 would have a positive effect on deer and elk. Access Options 2 and 3 allow winter travel 2 and 7 days per week, respectively. The disturbance to mule deer and elk would be greatest for 7 days of travel, with less disturbance for 2 days of travel.

Indirect Impacts on Big Game

Access improves the opportunity for hunting in an area. This can have an adverse impact on big game. Black bear and mountain lion hunting along the South Fork drainage removes individuals of these species. It has the potential to displace big game from more favorable to less favorable habitats. There is no information available for this drainage that shows that current levels of hunting have prevented attainment of State big game population objectives.

Alternative NAFP would result in the least risk of disturbance to big game from black bear and mountain lion hunting as access would be the most limited.

In all other alternatives (NA, EA, EG, RA, RG, and RAG), the potential impacts from hunting would be greater than Alternative NAFP, due to access along the South Fork Road. The differences between these alternatives are slight.

Other Wildlife Species

Other species of wildlife, such as a variety of rodents, various species of raptors and passerine birds, would be most affected in late spring, summer and early fall by differing levels of traffic and traffic flow.

Threatened and Endangered Species

Alternative NAFP would result in the least potential risk of disturbance to bald eagles and gray wolves, as access would be the most limited.

All other alternatives (NA, EA, EG, RA, RG, and RAG) could have greater potential impacts than Alternative NAFP, due to access along the South Fork Road. The differences between these alternatives are slight.

Winter Options

Winter management options could affect the number of contacts between hunters wintering bald eagles and gray wolves. However, the overall impact for each option would not differ greatly, and would not likely have an adverse affect on these species. Adequate mitigation measures are provided to protect these species currently from impact of use. This could change if bald eagles begin to nest within the South Fork of the Salmon River and packs of wolves become established in the area. Access option 1 would have the least affect due to the closure, Access Option 2 an intermediate level of affect, and Access Option 3 the greatest affect. None of these options would prevent recovery of the listed species.

A Biological Opinion dated July 22, 1985, and modified in letters dated December 20, 1985, and December 24, 1987, were completed by the United States Fish and Wildlife Service (USFWS) in response to a request for formal consultation by the Forest Service on the South Fork Salmon River Road Management Environmental Assessment (1984). It was their opinion, at the time, that uncontrolled winter access on the South Fork Salmon River Road probably would jeopardize the continued existence of the gray wolf. The Biological Opinion and the Northern Rocky Mountain Wolf Recovery Plan provide a thorough discussion of the gray wolf and its habitat needs in this area.

Based on an evaluation completed by the Forest Service for the preferred alternative in the South Fork Salmon River Road Project Draft Environmental Impact Statement (including the road improvement and winter access management), the Forest Service concludes the proposed action will not adversely affect the recovery of the gray wolf in central Idaho. The Forest Service has prepared a Biological Assessment that has been reviewed by the USFWS. The USFWS Biological Opinion dated March 1, 1990, concurs that the proposed actions with conservation measures would not jeopardize the gray wolf. The completed Biological Opinion, referenced above, indicated that winter road management activities would have no effect on bald eagles. The Biological Opinion (Appendix I) and the Northern Rocky Mountain Wolf Recovery Plan provide a thorough discussion of the gray wolf and its habitat needs in this area.

Fish

Sedimentation and Fish Habitat

Sediment reduces the quality and quantity of spawning, rearing and over-wintering areas for fish species dependent upon clean gravel. It affects spawning success by filling spaces between rocks and gravel that can smother eggs and trap fry attempting to emerge. Other life stages are adversely affected by the reduction of instream cover and habitat diversity. Sediment also limits aquatic invertebrate populations used as a food source by predatory fish.

All alternatives except Alternative NA would improve fish habitat by reducing the amount of sediment contributed to the river from the South Fork Road. The best comparison of alternatives for improvements to fish habitat is percent reduction in sediment from the present situation (Alternative NA). This is the primary effect of the alternatives, and the most direct quantifiable effect on fish habitat. The alternatives that reduce the greatest amount of sediment would have the greatest benefits to fish habitat. (Refer to the discussion on sediment in the following section on Water Quality).

There would be no sediment reduction or improvement to fish habitat for Alternative NA. With the South Fork Road as it is, the transport capacity of the river is nearly equal to the total amount of sediment contributed in the drainage. The South Fork Road would continue to produce large quantities of sediment, and possibly prevent fish habitat in the South Fork Salmon River to recover in the foreseeable future.

All other alternatives have the potential to improve fish habitat in proportion to the percent reduction in sediment displayed in Table IV-4. In this table, Alternatives NAFP, RA, RAG would have the highest potential for benefits to fish habitat, followed by EA, RG, EG, and NA, respectively.

Winter Options

Alternatives EG, EA, RG, RA, and RAG include management options that could affect the amount of erosion from the road during winter. Snow removal for Options 2 and 3 would increase the amount of erosion on the road surface for Alternatives NA, EG, RG, and RAG in comparison to Winter Option 1. There would be only a minor difference for asphalt surfaces in Alternatives EA, RA, and RAG. The risk of mass failure from snow removal would be increased slightly over natural with snow removal in winter options 2 and 3.

Short-Term Sediment

Short-term changes in sediment associated with road construction would be similar for all alternatives except Alternative NA. There should be no net increase in sediment from construction activities, since an equal or larger amount of sediment would be removed directly from the river to offset potential short-term increases for a worst-case scenario (See discussion on sediment in the following section on Water Quality).

The effects on fish habitat for Alternatives NAFP, EA, EG, RA, RG, and RAG probably would be localized increases in the percentage of fine materials where construction is adjacent to the river or tributaries, and where culverts are removed or replaced. These areas would return quickly to pre-construction levels after a high flow event. In areas where sediment is directly removed, there could similarly be localized improvements to fish habitat, which would eventually return to the initial conditions. For Alternative NA, there would be no changes associated with construction.

Access to Fish

Access can affect fish populations and fish habitat by increasing or decreasing opportunities for contact between humans and fish. As an element of fish habitat management, access to fish is almost directly related to whether or not any road is open to travel and is not strongly influenced by trail access.

At current population levels, chinook salmon and steelhead trout densities would be adversely affected by any increase in mortality associated with human contact. Resident species, particularly native cutthroat trout, are highly susceptible to recreation pressures. However, the potential impacts to resident species can be offset through mitigation. The relationships between fish populations and access are described in the Payette National Forest Plan FEIS, page III-44.

Alternative NAFP would result in the least risk of adverse impacts to fish from access. Sixteen miles of road access would be replaced with trail access, and 16 miles of the South Fork Road would remain. Approximately 7 miles of road would be less than 100 feet from the river.

In Alternatives RA, RG, and RAG, approximately 3.6 miles of road access would be moved farther away from the river, and converted to a trail. The South Fork Road would be 31 miles in length, with approximately 11.5 miles of road would be less than 100 feet from the river. These three alternatives would have fewer potential impacts than the existing road location (Alternatives NA, EA, and EG), but would be less effective than Alternative NAFP in reducing impacts.

Alternatives NA, EA, and EG would have the greatest amount of road access to the river, and the greatest potential exposure of fish to human contact. The South Fork Road would be 31 miles in length, with approximately 13 miles where the road is less than 100 feet from the river.

If alternatives with asphalt surfaces (EA, RA, and RAG) attract additional traffic, there could also be an increase in the number of contacts between humans and fish related to the increased traffic. Alternatives EA, RA, and RAG would be similar and could potentially attract the largest increase in traffic. However, the probable increase would not likely be large enough to make more than a minor difference between alternatives. For Alternatives NA, EG, and RG, the traffic would be similar to the present traffic. Alternative NAFP would probably attract less traffic than NA, EA, EG, RA, RG, and RAG, and have the lowest exposure of fish to human contact.

Winter Options

Winter management options could affect the number of contacts between humans and fish, but the impacts for all options probably would be minor, since the area is closed to winter fishing, and there is little use of the river for winter recreation. Access Option 1 would have the least impact due to the closure. Access Option 3 would have the greatest impact, and Access Option 2 would have an intermediate level of impact.

Toxic Spills

Toxic spills could affect fish directly by poisoning, and indirectly through reduction of invertebrate prey species. The risk of exposure to a toxic spill varies for the alternatives and is related to several factors:

- the length of the road.
- the distance from the river and streams.
- the quantity and frequency of toxic materials being transported.
- the care and safety measures taken with the toxic materials.
- whether or not the road is used to haul toxic materials.
- time of the year.

Area mines and the Yellow Pine community use numerous types of materials that are toxic to fish and aquatic organisms. Presently, the most common toxic materials hauled on the South Fork Road are diesel fuel, heating oil, gasoline and lime. Commercial hauling of other materials is allowed through a permit system, and private hauling of toxic materials is not regulated.

Alternative NA would permit legal hauling of toxic materials as described above. The South Fork Road would be 31 miles in length, with 13 miles less than 100 feet from the river. The fish would have the highest chance of exposure to toxic materials with this alternative.

Alternative NAFP would not permit hauling of toxic materials, and the road could not be used to haul materials from Cascade to the mines or Yellow Pine. Sixteen miles of the South Fork Road would remain in the drainage, with approximately seven miles less than 100 feet from the river. Organisms in the South Fork Salmon River would have the least chance of exposure to toxic materials with this alternative.

All other Alternatives (EA, EG, RA, RG and RAG) would have more stringent restrictions on hauling than Alternative NA, and would limit both private and commercial use of the South Fork Road for transporting toxic materials (See Appendix E - Road Management Plan). There would be approximately 31 miles of the South Fork Road in the drainage, for all five alternatives. Alternatives EA and EG would have 13 miles less than 100 feet from the river, and have the highest chance of exposing organisms in the South Fork to toxic materials. Alternatives RA, RG, and RAG would have 11.5 miles less than 100 feet from the river, and have a lower chance of exposure than alternatives using the existing route (NA, EA, and EG), and a higher chance of exposure than Alternative NAFP.

Surface treatments and drainage structures could affect the severity of a chemical spill. Gravel surfaces in Alternatives NA, NAFP, EG, RG, and RAG can absorb limited amounts of liquid materials and have the roughest surfaces. These attributes would slow the delivery rate from the road and reduce the volume that could reach the river. However, gravel surfaces also include a ditchline that would concentrate any liquids, routing them directly into drainage structures and could increase delivery to the river. The location of the spill and the response time for spill containment and cleanup would determine the amount of toxic material delivered to the river.

Asphalt surfaces used in Alternatives EA, RA, and RAG would absorb very limited amounts of liquid materials spilled on the road surface, and have a faster delivery rate to drainages or to the shoulder of the road. Outsloping the paved road could dissipate a spill and reduce the volume delivered to the river to a greater extent than gravel with insloping, but would be more dispersed and harder to cleanup.

The Environmental Consequences

A worst case scenario for a toxic spill would be an illegal haul where toxic materials caused substantial losses of fish and aquatic organisms. This would be possible for all alternatives, including NAFP.

Winter Options

Winter Option 1 would eliminate the possibility of transporting toxic materials during most winters due to snow accumulation, and have the lowest risk to fish. There would be a possibility that toxic materials could be transported illegally or for emergencies with Winter Options 2 and 3, with risk of exposure to fish. Frozen soil and rutted roads could increase the amount of liquid toxic material reaching the river.

Fish Passage

Fish passage barriers from road culverts would be removed at Cabin, Goat, and Fourmile Creeks in all alternatives except Alternative NA. No new barriers would be created. Removal of the fish passage barriers would increase the amount of available habitat for both resident and anadromous fish in the affected streams. The stream acreage affected, would be identical for all alternatives except Alternative NA and is displayed in Table IV-3.

For Alternative NA, passage problems would remain as they are presently. All fish passage at Goat Creek would be blocked under all likely flow conditions. Passage at Cabin Creek would be blocked for most species at average flows and low flows. Passage at Fourmile Creek would be blocked for some species under low flow conditions.

Removal of passage barriers in Alternatives NAFP, EA, EG, RA, RG, and RAG would increase the amount of spawning habitat for steelhead, and rearing habitat for chinook salmon in Cabin Creek. Removal of barriers at Fourmile and Cabin Creeks could potentially increase the available habitat for Dolly Varden and cutthroat, and improve the quality of habitat for rainbow trout by permitting free movement.

Table IV-2
Changes in Fish Habitat from Culvert Removal

Creek Name	Problem	Effect of Removal
Cabin Creek	Passage blocked by steep drop at culvert.	Provide access to about 21 acres of fish habitat suitable for both resident and anadromous species. (estimates do not include access to Warm Lake)
Goat Creek	Passage blocked by steep drop at culvert.	Provide access to about 3 acres of fish habitat. This includes rearing areas for anadromous fish near the mouth, and areas suitable for resident species.
Fourmile Creek	Passage impaired by drop below culvert (Temporary improvements are in place.)	Improve access to about 10 acres of fish habitat, suitable primarily for resident species. Most of the areas suitable for anadromous fish are below the culvert.

Cumulative Effects on Fish

Scope For Anadromous Fish

The scope considered for cumulative effects on anadromous fish includes all impacts that affect the reproductive success of adults and survival of smolts in the South Fork Salmon River. There are other cumulative impacts that affect salmon and steelhead populations downstream from the project area and in the ocean. There is an estimated 90% mortality of smolts migrating toward the ocean (See 1986 Staff Issue Paper, Northwest Power Planning Council; Hydropower Responsibility for Salmon and Steelhead Losses in the Columbia River Basin), and substantial losses from commercial, sport and subsistence fishing, and upstream migration of adults. These downstream effects would be the same for all alternatives.

The cumulative effects on the reproductive success of adults reaching the South Fork Salmon River and survival of smolts in the river would differ among alternatives, and would be influenced by Forest management and other activities in the drainage.

Scope for Non-Migratory Fish

The scope considered for cumulative effects on non-migratory fish includes all impacts that affect growth and survival of fish species found in the South Fork Salmon River.

Types of Cumulative Effects

The largest effect on fish in the South Fork is related to sediment (cumulative sediment impacts are discussed in the section on Water Quality). Human-induced sediment comes

primarily from roads, timber harvest, mines, livestock grazing, and forest fires. Timber harvest, road building and livestock grazing have been suspended, reducing sediment from these sources. Since the 1960s, over 500 miles of road have been closed in the drainage. The cumulative impacts of these reductions in sediment have allowed some recovery of fish habitat since the large storm event in 1974 (See Forest Plan FEIS, pages IV-39-49, and Warm Lake Fire Recovery FEIS, pages III-50-53, for more discussion on cumulative effects), but fish habitat has not yet recovered to its historic condition. (See Tables III-4 and III-5 in Chapter III.) In batholith soils, natural erosion will continue to produce large quantities of sediment.

In addition to the effects of sediment, fish could be affected by the cumulative effects exposure to toxic materials, alteration of instream habitat (encroachment on the stream, removal of logs and debris, culverts, etc.), impacts to riparian vegetation and stream banks, and human effects of fish harvest and disturbance.

Cumulative Effects of the Alternatives

The cumulative effects associated with each alternative, would be the net effect of the following elements, displayed for each alternative in Table IV-3.

- toxic material
- sediment
- access to fish
- removal of passage barriers

Alternative NA would have the highest impacts to fish for all four elements. All other alternatives would be the same for fish passage.

Alternative NAFP would have the least potential effects from toxic materials and access and the greatest reduction in sediment delivery.

Alternatives EA and EG would both have the second highest impacts from toxics and the impacts from toxics and the greatest impacts from access. Alternative EA would have the greatest reduction in sediment delivery, while Alternative EG would have the third greatest reduction in sediment delivery.

Alternative RA and RAG are nearly the same and would have the second lowest impacts from toxics, intermediate impacts from access, and the greatest reduction in sediment delivery.

Alternative RG would have the second lowest impacts from toxics, intermediate impacts from access, and the second greatest reduction in sediment delivery.

Table IV-3 Cumulative Effects on Fish

Alternative	Toxics	Fish Passage	Access	Sediment	Cumulative Effect
NAFP	<ul style="list-style-type: none"> •Lowest Risk. •16 miles of road parallel to the SFSR. •7 miles of road less than 100' from river. •Route could not be used to haul toxics. 	All passage barriers removed at culverts.	<ul style="list-style-type: none"> •Least access. •16 miles of road. •7 miles of road less than 100' from river. 	<ul style="list-style-type: none"> •Most reduction in sediment delivery. (37% sediment reduction; EA, RA and RAG.) •Lowest risk of mass failure. (No snow removal) 	<ul style="list-style-type: none"> •Least adverse impacts from toxics, access and passage barriers. •Most reduction in sediment delivery.
NA	<ul style="list-style-type: none"> •Highest Risk. •31.5 miles of road parallel to the SFSR. •13 miles of road less than 100' from river. •Route could be used to haul toxics. 	Road culverts would continue to block fish passage at Fourmile, Cabin and Goat creeks.	<ul style="list-style-type: none"> •Most access. •31.5 miles of road. •13 miles of road less than 100' from river. 	<ul style="list-style-type: none"> •Least reduction in sediment delivery. (0% sediment reduction) •Increased risk of mass failure risk from snow removal. 	<ul style="list-style-type: none"> •Most adverse impact from toxics, access, passage barriers, and sediment delivery. Least reduction in sediment delivery.
EA	<ul style="list-style-type: none"> •Second Highest Risk. •31.5 miles of road parallel to the SFSR. •13 miles of road less than 100' from river. Transport of toxics severely restricted. 	Same as NAFP.	<ul style="list-style-type: none"> •Most access. (Same as NA and EG) •30.7 miles of road. •11.5 of road less than 100' from river. 	<ul style="list-style-type: none"> •Sediment delivery same as NAFP. (37% sediment reduction) •Risk of mass failure same as NAFP for winter access option 1; same as NA for winter access options 2 and 3. 	<ul style="list-style-type: none"> •Second highest risk of adverse impacts from toxics. •Most adverse impacts from access. •Most reduction in sediment delivery.
EG	<ul style="list-style-type: none"> •Second Highest Risk. (same as EA) 	Same as NAFP.	<ul style="list-style-type: none"> •Most access. (Same as RA and RAG) 	<ul style="list-style-type: none"> •Third greatest reduction in sediment delivery. (35% sediment reduction) •Risk of mass failure same as EA. 	<ul style="list-style-type: none"> •Second highest risk of adverse impacts from toxics. •Most adverse impacts from access. •Third greatest reduction in sediment delivery.

The Environmental Consequences

Alternative	Toxics	Fish Passage	Access	Sediment	Cumulative Effect
RA	<ul style="list-style-type: none"> •Second Lowest Risk. (Same as RG & RAG) •30.7 miles of road parallel to the SFSR. Transport of toxics severely restricted. 	Same as NAFF.	<ul style="list-style-type: none"> •Intermediate access. (Same as RG & RAG) •30.7 miles of road. •13 miles of road less than 100' from river. 	<ul style="list-style-type: none"> •Sediment delivery same as NAFF. •Mass failure risk same as EA. 	<ul style="list-style-type: none"> •Second lowest risk of adverse impacts from toxics. •Intermediate adverse impacts from toxics. •Second greatest reduction in sediment delivery.
RG	<ul style="list-style-type: none"> •Second Lowest Risk. (Same as RA and RAG) 	Same as NAFF.	<ul style="list-style-type: none"> •Intermediate access. (Same as RA & RAG) 	<ul style="list-style-type: none"> •Second greatest reduction in sediment delivery. (36% sediment reduction) •Mass failure risk same as EA. 	<ul style="list-style-type: none"> •Second lowest risk of adverse impacts from toxics. •Intermediate adverse impacts from toxics. •Second greatest reduction in sediment delivery.
RAG	<ul style="list-style-type: none"> •Second Lowest Risk. (Same as RA and RG) 	Same as NAFF.	<ul style="list-style-type: none"> •Intermediate access. (Same as RA & RG) 	Same as RA.	Same as RA.

Soil and Water

Introduction

Soil and water resources are affected by the road prism, use of the area near streams and rivers, by mitigation and management of erosion and sedimentation, and by natural occurrences of fire and floods. Water supports both non-migratory and anadromous fish in the drainage and riparian areas that are discussed in other sections of this chapter.

Soil Resources

The soil resources in the project area are fragile in nature. The application of mitigation measures will assist in stabilization of disturbed areas, by constraints that will leave most areas untouched, and through rehabilitation of areas that have a long history of accelerated erosion rates. The greatest reduction of erosion in all alternatives, except the existing condition (Alternative NA), occurs from the application of these mitigation measures to the existing cuts and fills to augment the existing vegetation and its stabilizing ability. Where vegetation is not currently controlling erosion, additional measures will be applied to provide stability as well as vegetative cover. The comparison of the erosion from the road by alternative is displayed in Table IV-4.

The existing condition (Alternative NA) produces the most erosion. This is due to the continuing problem areas of accelerated erosion along the road corridor.

Alternative EG, which gravels the existing alignment, contains the next highest erosion rates. This is due to the limited effect gravel has had on reducing erosion, though the same mitigation would be applied to the cut and fill slopes as in the pavement alternatives.

Alternative RG (gravel the relocation alignment) reduces erosion more than Alternative EG. It is more successful in reducing erosion than Alternatives NA and EG because locating the road away from the river on very flat terrain reduces the erosion. Gravel is less efficient at reducing erosion than pavement on the road surface.

Alternative EA is fourth in erosion reduction gains because of the effectiveness of the pavement. It is similar to the benefits gained by closing the road (Alternative NAFP). Alternative NAFP reduces erosion slightly more than Alternative EA.

The greatest gains in erosion reduction occur in the Alternatives RA and RAG. They relocate the road away from the river with the bypass alignment and pave it where it is near the South Fork Salmon River. The combination of pavement of the road and relocation on much flatter terrain has the greatest reduction of erosion of the alternatives.

Soil erosion is the most important soil consideration for the reduction of sediment from the project corridor. The proposed project would provide a substantial increase in stabilization over the present condition of the road prism, and its effects on soil resources adjacent to the road.

All the proposed alternatives would provide maximum stabilization to the cut and fill slopes of the road prism. Engineering design projections are that very few new cuts or

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fills would be needed. Mitigation and treatment measures would increase existing vegetation and stabilizing factors in some areas to augment the ability of cut and fill slopes to hold soil in place.

Erosion and Sediment Transport

Except for Alternative NA, all alternatives would reduce the amount of sediment contributed to the stream from the South Fork Salmon River Road. This reduction would occur through two approaches: reduction of erosion sources and reduction of sediment delivery, and by the use of mitigation and management constraints during and after construction activities. Construction monitoring would ensure early detection of any sedimentation and erosion that may occur. It would provide information for the inspectors and contracting officer on the effectiveness of the mitigation and constraints used to control erosion and sediment delivery. Ongoing monitoring after construction will detect problems and provide information to repair damage and/or eliminate problems.

Sediment sources would be reduced through treatment of unstable cut and fill slopes, treatment of the road surface, and obliteration of the existing road. Some sediment sources will continue to exist, until mitigation measures can take effect to stabilize these sources. Over the long term, the erosion would decrease as sources are stabilized. Erosion will never be totally eliminated due to the soil characteristics of the Idaho Batholith and the erosive power of extreme events. The goal is to reduce the erosion from these sources to a low level or near-natural erosion rate, so that an extreme precipitation or runoff event would be necessary to produce sediment from each stabilized source area.

Revegetation techniques, drainage improvements, and retaining structures are cut and fill slope treatments that would be used to reduce erosion and sediment production. These treatments are similar in all alternatives, except NAFP and NA. The NAFP Alternative contains some mitigation measures, but not to the extent of the proposed action alternatives. The NA alternative is the existing condition, and contains a variety of patchwork mitigation that has been applied in the past, under this alternative, no new mitigation would be introduced by this project. The Payette and Boise National Forests reduce erosion and sedimentation in the basin as funding permits.

Road surface treatments include pavement, gravel, and a combination of gravel and pavement (Alternative RAG). Pavement eliminates sediment production from the road surface and is included in Alternatives EA, RA and RAG. Gravel reduces, but does not eliminate, sediment production from the road surface and ditchline in comparison to native surface. Gravel would be used in Alternatives NAFP, EG, RG and RAG.

Road obliteration would greatly reduce sediment production from the entire road prism and eventually return the road to a state of natural production. Initially, obliteration activities, such as removal of culverts and disturbance of the road prism, would cause an increase in sediment production. The techniques available to put a road to bed would reduce the unstable slope gradients on the cut and fill, provide armoring to streams and drains where culverts are pulled, and provide catchment for any erosion that does occur.

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Sediment production would decrease yearly for several years until vegetation is reestablished and would then level out to a rate near-natural sediment production.

Sediment delivery would be reduced by relocating the road away from the river and managing the water runoff. Water from paved surfaces would be dispersed by proper management of runoff through drainage design, which would reduce the capacity to transport sediment to streams. Water from insloped gravel surfaces would be routed into ditches and cross drains, which would concentrate the runoff and increase the delivery of sediment to the river in comparison to out-sloped areas.

Mass failures can occur on cut and fill slopes as well as on natural slopes where water or saturated soil conditions exist. These are usually the result of a large storm event, such as rain on snow with saturated soil conditions. Though this type of failure is not a common occurrence, it does produce mass quantities of sediment. Certain areas are more prone to this type of failure, so a smaller event can trigger erosion and sediment production from that site. They are fairly common in the non-cohesive soils of the Idaho Batholith. The risk of mass failure is tied to the risk of large storm or runoff events. Construction activity can destabilize areas, which would increase the risk of mass failure, but this risk is low and does not vary much between alternatives because little new disturbance occurs on cut and fill slopes.

Precipitation during construction activities, in the action alternatives, could potentially add sediment to the South Fork Salmon River drainage on a one-time basis. Much of the construction would occur immediately adjacent to the river and its tributaries, and could deliver sediment directly into the water in these areas. Rainstorm events could also wash loosened materials into the river during construction. The risk of these problems would be minimized by mitigation measures described in Chapter II and Appendix B.

The potential sediment associated with alternative road locations varies from the differences in the size of the cut slopes, and the distance of the cut slopes from the river. Cut slopes contribute a substantial portion of the sediment produced from the road prism in the South Fork Salmon River. Much of the existing road prism is constructed on shallow, sandy soils formed from natural erosion. Road cuts on these landtypes are difficult to stabilize with vegetation because of the low fertility of the soils and the dryness of the sites. As a result, the soils are in a nearly constant state of movement from wind and water.

Individual cut slopes produce increasing amounts of sediment as the distance from the bottom to the top (slope length) and gradient increases. The amount of sediment that actually reaches the stream increases as the distance of the road prism to the channel becomes shorter.

The existing route has the highest potential for erosion and delivery from cut slopes. The cut slopes next to the river are generally steeper and larger, and the soils are generally more erosive than those found on the bypass, and they have a higher rate of delivery. The location for Alternatives RA, RG, and RAG would have less erosion and sedimentation than the existing route and the NA and NAFP alternatives. (See Appendix H)

Erosion also would be reduced by each alternative through treatment of the road surface. The native road surface (including the ditchline where water drains from the road) produces large amounts of sediment. Asphalt pavement would reduce erosion from the existing surface by nearly 100 percent, while gravel would reduce erosion by approxi-

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mately 79 percent (Boroughs and King, 1989)

A comparison of the erosion and sedimentation provided by each alternatives is displayed in Table IV-4. Additional information is provided in Appendix H. Appendix H details the analysis process used to compare the alternatives.

Table IV-4. Percent Reduction in Erosion and Delivery from Existing Road Prism. These numbers are based on figures in Appendix H. They include erosion from cut and fill slopes, road tread and ditch, and the routing of the eroded material through culverts or from the bottom of fill slopes to definable channels. See Appendix H for further detail.

Alternative	Road Prism	Road Prism
	Annual Erosion Rate (% Reduction from Existing)	Annual Sediment Delivery (% Reduction from Existing)
NAFP	34	37
NA	0	0
EA	34	37
EG	32	35
RA	35	37
RG	33	36
RAG	35	37

Water Quality

The Clean Water Act

The South Fork Salmon River has been designated by the State of Idaho Department of Environmental Quality as a "Water Quality Limited Segment" and a "Stream Segment of Concern." The first designation falls under the Clean Water Act; this means that the limiting pollutant in the river needs to be reduced for the protection of the beneficial uses of the river. In the case of the South Fork Salmon River, sediment has been identified as the pollutant, and the limiting beneficial use as the Summer Chinook Salmon.

The Clean Water Act states that those waters classified as water quality limited be analyzed and a load determined for the pollutant in the segment. The Forest Service is currently working with the Idaho Department of Environmental Quality to develop the total maximum daily load (TMDL) process. For non-point source pollution, the process will be a feedback loop where site specific best management practices (BMPs) are applied and then monitored for their effectiveness.

To meet the intent of the Act, the Idaho Department of Environmental Quality has determined that no net increase in sediment from the project would occur. To comply with this, a sediment analysis has been completed, and estimates on the amount of sediment that could reasonably be expected was determined for the construction period, and for first year flush of sediment from any disturbed cut and fills. After the initial year, the sediment input will be greatly reduced from current levels.

The amount estimated for the initial construction, spread over two or three years, (1300 yards) will be directly removed from the South Fork Salmon River and its tributaries to mitigate the worst case construction and first year flush contributions. Sediment removal at the selected sites will offset the inputs of those areas below it. The sites that have been selected for sediment removal are:

- Rice Creek on the Boise NF- 2 sites have been selected.
- Curtis Creek on the Boise NF- at the mouth of the creek.
- Cabin Creek on the Boise NF- above where the culverts will be removed.
- Goat Creek on the Payette NF- above where the culvert will be removed.
- South Fork Salmon River on the Payette NF- in the oxbow where most of the flow bypasses this area.

Sediment estimates for the first year following construction would be five times the later annual erosion rate (Megahan, personal communication). This estimate is for new road construction. Direct mitigation by removal of five times the projected sediment rate to the nearest channel would more than offset any construction and first year sediment production. Using this information, we estimate the sediment from initial construction to be 1300 yards or 1500 tons for the preferred alternative.

Winter Access

Winter road management options affect sediment production and delivery. The short-term sediment production will be greater than long-term sediment production due to the unstable areas being newly created by the construction activity. Long-term sediment production will be determined by the success of revegetation and stabilization efforts, timing and concentration of snowmelt and rain-on-snow events, and on snow cover or snow removal and placement of excess snow.

A large runoff event that is able to cause natural erosion, avalanches, and soil mass failures with a snowpack on the ground, will cause the road prism to produce sediment. The conditions of the road (snow cover or snow removal) may dictate to what extent sedimentation occurs.

Winter Access Option 1: With no snow removal, the snowpack insulates the road from extreme rain-on-snow and snowmelt events. The snowpack slows water flow by percolation to reach the road surface and hinders runoff along the road surface during melt conditions. In addition, the lack of traffic on the road eliminates rutting so concentrated flows rarely occur. Without concentrated flows causing erosion, sedimentation does not occur. There would be a very low risk of sediment delivery under this option. The risk is similar to natural rates and would only occur under extreme runoff conditions.

Winter Access Options 2 and 3: Snow removal uncovers the drivable road tread as a packed snow surface and compacts the snowbanks along the road. These hardened layers create a semi-permeable barrier to water flowing through the snow during melt conditions. The placement of excess snow on banks may cause sedimentation if a snowslide occurs from the excess weight of additional snow on the natural snowpack. These options provide a higher risk of sediment delivery. The risk is slightly higher than natural rates and depends on road condition and extreme event runoff.

The hardpacked snow on the road surface and banks will tend to concentrate runoff during melt conditions. Extreme runoff events, such as rain-on-snow events, have approximately 15 percent chance of occurring annually in this area. These extreme events will cause problems when runoff leaves the road in concentrated flows, especially if ruts in the snow direct runoff onto unprotected slopes. Although these problems with the right circumstances to cause severe erosion are small (less than 15 percent risk annually) some of the consequences can be severe. The following situations are possible if conditions are unfavorable.

The packed snow traps water on the road during melt conditions because the water cannot flow through the compressed layer very quickly. The water is also kept from leaving the

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road if drainages and culvert inlets are not cleared of snow. Unfortunately, culvert basins are not often cleared of snow. The following are worst case scenarios that are possible if the right conditions combine.

- Water trapped on the road surface ponds in low spots if large runoff volumes occur, as in rain-on-snow events. On a graveled surface the water may saturate the road prism and cause the fillslope and road to fail catastrophically. This is not as likely with a pavement surface because water penetration is greatly reduced, and saturated subgrades are unlikely.
- Trapped water also will find its own outlet if none have been provided by snow removal. If these areas of water runoff are not protected, erosion, sedimentation and possible fill failures will occur.
- On graveled surfaces traffic creates ruts in the snow and gravel surface. These ruts concentrate flow, which carries sediment into drainages. Because a gravel surface road is insloped, ditches also may erode if water is able to flow freely in them.
- On a pavement surface, only the snow on the road is rutted from traffic. The ruts concentrate water causing it to move faster on this smooth road surface. With an increase in velocity, the water has more energy for erosion. When the water leaves the road, greater erosion occurs if the fillslopes and drainage areas are unprotected. While unlikely, this could result in the most serious consequence of erosion and sedimentation from outslipping the road since water leaving the road surface cannot always be accurately predicted due to changing snow and ice rutting patterns.

Recreation Management as It Affects Soil and Water Resources

The effects of recreation on soil and water are related to concentration and timing of use by Forest visitors and the location and management of recreational sites. Recreation opportunities would change in all alternatives, with potential effects on soil and water. Recreational developments in the project corridor are concentrated in the riparian area of the South Fork Salmon River, which is sensitive to disturbance.

Potential effects include: irretrievable loss of soils from development of facilities; reductions in soil productivity due to compaction, displacement, and erosion; increased sedimentation; reduced vegetative cover; compacted, eroded, and collapsed stream banks; and water pollution from uncontrolled waste disposal and chemical spills. (See Payette National Forest Plan FEIS IV-70 for information on recreational impacts to soil and water).

In Alternative NAFF, river access would be restricted to 18 miles of trail in the obliterated portions and would remain unchanged for the remaining 16 miles of road. Overall, roaded access would be decreased by 14 road miles with increased trail access to the South Fork. Recreational use of the road would be the lowest of all the alternatives, resulting in fewer impacts along the River.

In Alternatives RA, RG, and RAG river access would increase through relocation of 4.4 miles of the existing road and construction of a 3.6 mile trail. Road reconstruction, trail construction, and improved access might encourage additional recreational use, and increase the impacts to soil and water associated with recreation.

In Alternatives NA, EA, and EG roaded access to the river would be the greatest due to

no trail and 31 miles of road along the river. This would produce the most impacts to soil and water since access is easy to more of the river.

Cumulative Effects

Past activities in the South Fork Salmon River have created many problems that exist today in the drainage. The past management of timber harvest and grazing methods were beyond what the drainage could support. This was made evident when the high runoff events in the 1960s and 1970s created great erosion losses and sediment deposition in creeks and the South Fork Salmon River, threatening anadromous fish and other sensitive salmonid species. Sediment remains stored throughout the system today. Many years will be required for the sediment to flush out of the system.

The proposed project is part of overall sediment reduction efforts in the South Fork Salmon River Basin. The foremost objective of sediment reduction is fish habitat improvement. Other management opportunities in the basin may be undertaken only if they are compatible with this goal.

The project has a moderate risk of short-term, cumulative impacts upon the river during and shortly after construction. Cumulative effects from the project include sediment additions from construction activity where mitigation measures are not 100 percent successful or are slow to stabilize the area. Other projects in the basin occurring within one to five years may add to sediment.

The amount of sediment produced during construction would be extremely small when compared to other sediment sources in the drainage. If no substantial increases occur in sedimentation from other sources, the cumulative impact from construction activities would have no measurable effect.

Alternatives NAFP, EA, EG, RA, RG, and RAG have the same amount of construction activities occurring near the river, so each would have a similar amount of short term impacts. Similar mitigation measures also would be provided to remove the projected sediment being delivered to channels. Alternative NA would have slightly lower short-term impacts because the present road would remain in place with high annual sediment contributions.

Sediment inputs from the rest of the drainage are many times the amount of this project, or the present road inputs to the system. Naturally occurring sediment accounts for the majority of the sediment in the system, much of it stored in the stream channels in the watershed and masks sediment reduction efforts. Other human-caused sediment contributes to the water quality problem and will continue to be a small part of the overall sedimentation in the basin, if additional rehabilitation and stabilization projects do not occur.

The 1989 fires that occurred in the drainage will cause sediment input into the drainage for the next 3 to 5 years. The magnitude of this increase and its potential effects on fish habitat is dependent upon the timing and intensity of high intensity storm events. There is a likelihood of severe high intensity storms that could cause extensive erosion in the headwaters of Dollar Creek, and in the two moderately burned areas on the steep face adjacent to the river. This risk should diminish during the next few years as vegetation becomes reestablished. After a period of time, the river would likely return to its present condition.

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There will be a long-term cumulative beneficial impact from the project as the road corridor becomes stabilized and the contribution of sediment to the river are reduced from present inputs. See Table IV-5.

Other proposed measures to reduce sedimentation such as bank stabilization, cleansing of spawning gravels, and direct removal of sediment also would remain unchanged (See South Fork Restoration Strategy for complete list of proposed projects). If these measures are effective and sediment is reduced to a level that promotes anadromous fish recovery in the area, several timber sales are planned for the end of the decade (See Payette National Forest Plan Appendix A, page A-2). Since monitoring has shown that recovery has been stagnant, these timber sales will be delayed until fish habitat monitoring shows a sustained beneficial change in spawning gravel embeddedness.

Future cumulative effects may include impacts from increased visitor use in riparian areas and along the river. They could accelerate bank erosion where unplanned access occurs. This would increase the sediment entering the South Fork Salmon River and its tributaries. Future use depends on many variables, and is further defined in the fish and recreation sections. This may or may not be a concern for future mitigation depending on the amount of people using the area.

Table IV-5 The Cumulative Effects of Projects and the 1989 Fires on Soil and Water in the SFSR.

Project or Occurrence	Sediment (Tons)	Analysis Method Used	Sediment Time Frame
1989 Fires	278	BOISED	1989-90
Warm Lake Project	0-58 (reduced from fire sediment)	BOISED	1990-94
Tailholt Timber Sale	0	BOISED	1990 or 1991
Proposed Timber Sales	0	--	(will not occur until fish recover) 1995-2000
Existing Sediment in SFSR from road	477	Megahan equations	Annually
SFSR Road Project	0-179 (reduced from present road)	Megahan equations	1991+ Annually
SFSR Direct removal	13,300	Actual amount	1991-93
Existing Management (roads and clearcuts)	4500	BOISED	Annually
Natural Sediment	15,600	BOISED	Annually

As Table IV-5 shows, several projects and the 1989 fires in the basin have been combined to show the amount of sediment in the basin. They are not directly comparable as shown, due to the different methods used for estimation of sediment. The biggest difference is between the BOISED model used on most of the projects, and the new method used for this project. This new technology allows a more accurate estimation of sediment based on actual field measurements of erosion and sediment delivery over time. Differences between models also exist when the road prism is averaged over large distances, which distort the changes that occur along the road and the distances to a channel. The level of detail used in this analysis is not practical for any but the most important and controversial projects, which require the level of accuracy needed for the South Fork Salmon River Road Project. (See Appendix H for a more indepth discussion of the analysis used for this project.)

Direct sediment removal from the river has the potential for the most immediate beneficial effects, but is not directly comparable with estimates of sediment production from the models. The production of sediment from the analysis used in this project is to the nearest downhill cross drain from that area. This sediment is then in storage to be moved by the next high water occurrence. The sediment estimations based on our analysis are for eroded material being transported into the sediment transport system.

Further cumulative effects analysis on the effects of sedimentation are described in the Fish Section in this chapter.

Riparian Resources

Introduction

Riparian resources in the project area will be improved under most alternatives, with some segments of the road in riparian areas, obliterated, reshaped and revegetated to a trail. These changes will result in a reclamation of the riparian area in the alternatives that contain a partially closed road corridor with a trail. The reclaimed areas will provide an addition in viable riparian acres.

Riparian Resources

Alternative NAFP would provide the most benefit to this resource because no new bypass road is proposed. Eighteen miles of the road would be closed, and all stream crossings and wetlands in the closed areas would be rehabilitated.

Alternative RA, RG, and RAG would relocate approximately four miles of the road away from the river. The relocations would have a minor effect on the riparian area in their new locations as old roads are widened and stream crossings constructed. The road may have a minor localized effect on any riparian areas it crosses (such as in stream crossings). Removal of the small riparian area will be insignificant. Larger wet areas near the road are buffered from the road corridor. Mitigation measures would ensure minimum impacts to riparian areas.

Alternatives RA, RG, and RAG also would benefit riparian areas in the southern sections of the road along the river. Though the present road has removed many riparian acres along the river, the obliteration of this road would include revegetation of unstable slopes along the river, planting riparian vegetation and rehabilitating the area for use as a trail. Some parts of the road prism cover areas of floodplains and wetlands along the southern

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part of the road that would be eliminated. The efforts at rehabilitation would concentrate on removing fill from stream crossings, increasing soil stability and planting riparian species along the trail and bypass road.

Alternatives NA, EA and EG provide the least chances of improving the riparian area condition. Alternative NA would maintain existing conditions in the drainage, with no improvements. Alternatives EA and EG provide for some rehabilitation efforts along the river, but maintains the loss of riparian area that the current road occupies. The rehabilitation efforts would concentrate on improving stability and adding more riparian vegetation to the existing cuts and fills.

Under all alternatives, except NAFP and NA, a design for using a combination of riparian vegetation and engineering is being applied for seven of the worst sites along the road. This process, called Soil-Bioengineering, provides a structural support of vegetation that stabilizes the slopes, and increases in strength as the vegetation grows. The rehabilitation of unstable areas and reclamation of riparian areas requires native vegetation to transplant. There will be about 150 acres of riparian vegetation that will have cuttings removed for transplanting in these unstable areas. This riparian vegetation is located in small dispersed areas with varying degrees of ease of access. The harvest of these cuttings will not be a total removal of vegetation, but a size and site selection for proper material for transplanting. One third of the cuttings will be taken from private land, and the remainder on Forest Service land on the Boise National Forest outside the project area. This will not disturb the root zone or ground cover and will be accomplished in winter. The plants that remain will begin vigorous sprouting and should attain current height within 10 years. While the vegetation is resprouting, there should be a short term benefit to big game due to increased forage in these riparian areas.

Floodplain and Wetland Analysis

The alternatives affect floodplains and wetlands in the same manner that they affect riparian areas. The greatest benefit to floodplains and wetlands would be from those areas that move the road away from the 100 year floodplain of the South Fork Salmon River.

Alternative NAFP provides the best restoration of the wetlands and floodplains by eliminating the most road adjacent to the river. Alternatives RA, RG and RAG provide the next best opportunities with a lesser amount of road obliterated where adjacent to the river. Alternatives NA, EA and EG provide the least benefits to floodplains and wetlands by maintaining the present road alignment.

Irreversible or Irretrievable Commitment of Resources

Irreversible or irretrievable commitment of resources refers to management decisions where resources are either consumed or detrimentally affected for an extremely long period of time. Irretrievable refers to the loss of resources that are renewable only over a long period of time, while irreversible refers to loss of future options of resource use by committing them to a project at this time.

Fish Habitat and Water Quality

The most obvious commitment of resources is the loss of soil productivity in the road prism. There is a loss of soil in cut, fill and road surface areas and a reduction in its ability to support plant life as it would without the road. This is especially true where permanent structures exist or would be installed, i.e., retaining structures and other

structures formed from metal, asphalt, wood or concrete. The road prism would change very little from the existing because nearly all construction would be within the existing prism.

Erosional increases would be short term. Although the eroded material is transported and deposited in streams, it probably would be more than offset by removal of sediment from the river or its tributaries as mitigation. Any sediment impacts from construction would be minor in comparison to the amount of sediment reduced by direct removal and treatment of the road.

Recreation and Visuals

The recreation and visuals in the project area would change from the present experience and views that Forest users encounter in the area. Mitigation measures and design criteria would be used to retain as much of the scenic and natural character as possible.

Unavoidable Adverse Environmental Effects

Implementing any alternative would have some adverse environmental effects. Design constraints, mitigation measures and monitoring would minimize the impacts.

Fish Habitat/Water Quality

Alternatives NAFP, RA, RG, and RAG would close and rehabilitate most of the southern part of the South Fork Salmon River Road. By disturbing the road next to the South Fork Salmon River by removing culverts, reshaping fillslopes and scarifying the road tread, some short-term erosion and sedimentation would occur. The estimated time of stabilization is three to five years.

Other erosion would occur during road construction when storms or creeks provide water to transport and deposit the sediment in the South Fork Salmon River or its tributaries. This is most likely to occur during or immediately following construction. Mitigation measures, design features and monitoring will keep impacts to a minimum. Direct sediment removal will have a large beneficial effect on fish habitat.

Recreation/Visuals

Visual quality would change after road construction takes place. Man-made structures, newly stabilized cut slopes and road surfacing would change the recreation experience in the project area. The change would be especially noticeable during and immediately after road construction.

Wildlife

Present wildlife habitat would be altered along the road corridor. Road construction, stabilization techniques, projected increased use of the area and winter use combine to have an adverse effect on those species that use the road corridor.

Short-Term Uses and Long-Term Productivity

Short-term uses and long-term productivity are in conflict in some areas of the project. Different resource needs are in conflict as well. Forest management is a fine balance between long-term goals and short-term impacts.

Fish Habitat/Water Quality

The project would achieve long-term sediment reduction. To accomplish this, some short-term, localized, negative impacts would be realized where construction disturbs an area. These disturbed areas would be stabilized to reduce the present erosion rate.

To offset short-term, negative impacts, sediment would be directly removed from the stream above the project area before construction begins. Additional improvement would come from fish habitat improvement projects, mitigation measures and management constraints that are designed into the project.

Recreation/Visuals

Visual resources would be affected long term because of the changes made to the road with paving, structures and road improvements.



Chapter V

List of Preparers



Contents

Major Contributors to the Analysis V-1

Others Who Contributed
to the Analysis V-2



Chapter V

List of Preparers

Major Contributors to the Analysis

Name/Office	Expertise	Relation to Analysis
John F. Hooper	Manager, Forester	Team Leader
Dennis J. Boles	Manager, Civil Engineer	Team Engineer
Jolyne Lea	Hydrologist	Team Hydrologist
Robert Ries	Fish Biologist	Team Fishery Biologist
Dan Hormaechea	Economist	Team Economist
Jim Arp	Landscape Architect	Team Visuals and Recreation Specialist
Bill Noblitt/ Floyd Gordon	Wildlife Biologist	Team Wildlife Biologist
Ronn Julian	District Ranger Cascade Ranger District	Recreation Specialist and Unit Manager
George Buckley	Engineering Technician	South Fork Road Specialist
Clem Pope	Resource Specialist Wilderness, Recreation, Trails Krassel Ranger District	Recreation Specialist
Tom Olson	Valley County Commissioner	Maintenance Specialist and local social needs
Leslie Ankenman	County Engineer	Valley County Roads
Don Mullen	Yellow Pine Resident	Local social needs
Cliff Lee	Industry Engineer	Local timber concerns Evergreen Forest Products
Dave Imel	Yellow Pine Resident	Local social needs
Larry Kingsbury	Archaeologist	Project Archaeologist

Others Who Contributed to the Analysis

Don Anderson	Fisheries Biologist, Idaho Dept. Fish & Game
John Arnold	Consulting Soil Scientist
Jennifer Balis	Engineer, Payette National Forest
Steve Bauer	Idaho DEQ Hydrologist
Craig Blacketter	Engineer, Gunnison National Forest
Bud Boyd	Yellow Pine Resident
Dave Brown	Nelson Landscape Service, Spokane, WA
Howard Buettgenbach	Yellow Pine Resident
Tom Bumstead	WSU, College of Engineering
Dave Burns	Fisheries Biologist, Payette National Forest
Tim Burton	Idaho DEQ Liason Hydrologist
Bill Clark	Idaho DEQ Hydrologist
Janine Clayton	Geologist, Payette National Forest
Kent Doughty	Cascade Environmental Services
James Thomas Durelia	Archeologist, Payette National Forest
Kelly Dye	Engineer, Payette National Forest
Gary Elliot	Forester, Krassel Ranger District
Harv Forsgren	Regional Fishery Biologist
Pam Gardner	Public Affairs Specialist, Payette National Forest
Ralph Geibel	Forest Engineer, Payette National Forest
Phil Gilman	Forest Planner, Payette National Forest
Geoff Harvey	Idaho DEQ Hydrologist
Terry Harwood	Engineer, Regional Office
Tom Hass	Engineer, Cascade Ranger District
Margaret Hillhouse	Hydrologist, Boise National Forest
Carla Kamedula	Stenographer/Editor
Dave Kennell	Hydrologist, Payette National Forest
Kelvin Kent	American Excelsior, Ogden UT
Earl Kimball	District Ranger, Krassel Ranger District
Shirley Lindstrom	Senator McClure's Staff
John Lund	Fisheries Biologist, Payette National Forest
Dean Martens	Soil Scientist, Payette National Forest
Carol McCall	Stenographer/Editor
Walt Megahan	Scientist, Intermountain Research Station
Ann Meirobian	Archeologist, Payette National Forest
Rick Mohr	Coeur-Thunder Mountain Mine
Dayton Nelson	Assistant Regional Engineer
Donald Newberry	Fisheries Biologist, Boise National Forest
Anne Oberly	Coeur-Thunder Mountain Mine
Dave Olson	Public Affairs Specialist, Payette National Forest
Duane Peterson	Valley County Road Foreman
John Potyondy	Hydrologist, Boise National Forest
Mike Remboldt	Geo Technical Engineer, Regional Office
Ed Schect	Asphalt Institute
Keith Schnare	Engineer, Regional Office
Dave Simmonds	Idaho Conservation League
Pete Stender	Hydrologist, Regional Office
Joe Stringer	Government Council, Regional Office
John Summer	Yellow Pine Resident
John Thornton	Hydrologist, Boise National Forest
Jim Trenholm	Engineer, Regional Office
Randy Zuniga	Hydrologist, Payette National Forest

Chapter VI

The Public's Involvement

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Chapter VI

Consultation, Public Comments on the DEIS, and the Forest's Response

Introduction

The Payette National Forest conducted an active public involvement program throughout the planning process. Federal, state, tribal and local government agencies, organizations and individuals were provided opportunities to participate in identifying issues, concerns and opportunities.

This chapter contains information on the following:

- Public Involvement Efforts

- Overview

- Public Involvement Opportunities and Meetings

- Letters, Newsletters and News Releases

- News Articles and Letters to the Editor

- Scoping Issues for the Analysis

- Other Contacts

- Distribution List for DEIS

- Alphabetical List of Commenters on DEIS

- Major Issues, Concerns and Opportunities Raised by Commenters on DEIS
and How the Forest Changed the FEIS in Response

- Specific Comments on the DEIS

- Forest Responses to Comments

- Distribution List for FEIS and Record of Decision

Public Involvement Efforts

Overview

The public was involved early in the planning process with continuing opportunities offered as the analysis progressed. From the fall of 1988 through the summer of 1989, the project was well publicized through newsletters, news releases, field trips, group meetings and personal contacts. The extent of the publicity was reflected in the number of newspaper editorials and letters to the editors. The formal comment period began in November of 1989 with the release of the Draft Environmental Impact Statement. In response to 350 DEIS and DEIS Summaries distributed, 46 letters and phone calls were received. Replies to these letters and phone calls are part of this chapter. A number of substantial changes were made in the final EIS as a result of comments received on the DEIS (see page VI-9).

Public Involvement Opportunities and Meetings

Date	Type of Contact, Purpose, and Participants
October 88	Meeting with Coeur d'Alene Mines to discuss their use of the road and expectations for the future.
November 88	Meeting with Yellow Pine residents to discuss their use of the road and expectations for the future.
March 89	Meeting with Yellow Pine residents to talk about the analysis process and how they wanted to be involved.
March 89	Meeting with Valley County (road foremen, engineer and Commissioner) to talk about their concerns and how they wanted to be involved.
June 89	Field trip to South Fork Road Project with Idaho Wildlife Federation.
June 89	Field trip with Coeur d'Alene Mines to get professional input on reclamation and construction.
June 89	Field trip with publics to discuss options and alternatives (over 250 invitations were issued with 12 attending).
June 89	Meeting with Boise/Payette Backcountry Coalition, Sierra Club and Idaho Conservation League to discuss options and alternatives.
November 89	Meeting with Yellow Pine residents to discuss DEIS.

Letters, Newsletters, and News Releases

Date	Type of Item
November 88	Reply to Hecla Mining Co. - V.J. LaSalle
December 88	Letter to Forest Plan reviewers - notifying of proposed Forest Plan amendment - J.S. Tixier
January 89	Information letter to Mr. and Mrs. Richard Scott - J. Hooper
February 89	South Fork Road Project Newsletter - 400+ letters - J. Hooper
February 89	Information letter to Doris Milner - J. Hooper

The Public's Involvement

May 89	Information letter to Robert G. Benedetti - J.S. Tixier
May 89	Information letter to Ms. Nelle Tobias - J.S. Tixier
May 89	Information letter to Mr. and Mrs. Hausrath - J.S. Tixier
May 89	Information letter to Mrs. Naomi Davis - J.S. Tixier
May 89	Information letter to John R. Swanson - J. Hooper
June 89	South Fork Road Project Newsletter - 400+ letters - J. Hooper
July 89	Letter transmitting Draft EIS sent to Forest Plan reviewers and South Fork Road Project mailing list - V.J. LaSalle

News Articles and Letters to the Editor

Date	Type of Item	Date	Type of Item
Fall 88	Letter - Transitions	February 89	Article - ID Statesman
Fall 88	Editorial - Ridgelines	March 89	Letter - Star News
October 88	Article - Advocate	April 89	Letter - ID Statesman
October 88	Editorial - Star News	April 89	Letter - ID Statesman
November 88	Letter - ID Statesman	July 89	Article - Advocate
November 88	Letter (2) - Star News	July 89	Article - Star News
January 89	Editorial - Advocate	November 89	Article - ID Statesman
January 89	Letter - ID Statesman	November 89	Editorial - Star News
January 89	Letter - ID Statesman	November 89	Viewpoint - Statesman
February 89	Article - Star News	June 90	Letter- Star News

Scoping Issues for the Analysis

The scoping effort for the analysis started on February 5, 1989. The Notice of Intent to Prepare an Environmental Impact Statement was published in the Federal Register in Vol. 54, No. 62 dated April 3, 1989. Forty-six people responded, resulting in 96 unique statements. The responses resulted in the issues used in the analysis.

Other Contacts

There have been many other contacts with individuals, organizations and agencies by interdisciplinary team members and unit managers. These contacts include:

- Senatorial and Congressional staffs
- Local landowners
- Individual Valley County residents
- Contractors, vendors, and manufacturers
- Local organizations and groups
- Specialists with other agencies and departments

DEIS Distribution List

Henry Abstein, Jr.	Don L. Crawford
Jim Adkins	Sierra Club
Zena C Ranch	Northern Rockies Chapter
Advocate	Kenneth Crowder
Carey Allen	Del Davis
Utah Power and Light Co.	J.W. DeBoer
Don Anderson	Brundage Mountain Ski Area
Idaho Department of Fish & Game	Del Dodds
Leslie Ankenman	Boise Cascade Corporation
John Arnold	Marilyn Ekman
Dennis Baird	Leslie Erwin
Tony Baltic	Federal Highway Administrator
USDA Forest Service	Region 10
Rocky Mtn. Forest Range & Experiment	Caryn Fieger
Station	Erik Fisher
Rodman N. Barker	Boise/Payette Backcountry
American Legion	Coalition
Robert G. Benedetti, M.D.	Kurt Flynn
Allen Bent	Federal Energy Regulatory
Dave Bivens	Commission
Idaho Farm Bureau Federation	Stacy Gebhards
Boise National Forest	Idaho Department of Fish & Game
Stanley Boyd	Craig Gehrke
Idaho Wool Growers Association	The Wilderness Society
Ernest Bratley	Charles J. Gordon
Robert P. Brickinridge	Jay Gore
Idaho National Engineering	U.S. Fish and Wildlife Service
Laboratory	William G. Graham
Warren Brown	Water Planning Bureau
Andy Brunell	Liz Greenhagen
Office of the Governor	Tom Grote
State of Idaho	Star News
Howard Buettgenbach	Peter Grubb
Elbert Bunch	River Odysseys West
Payette Lakes Wildlife Federation	Stanley F. Hamilton
Bette Carlson	Idaho Department of Lands
Cascade Library	John Hanson
Tom Cassidy	Vern Harder
American Rivers	J. Bud Harp
Cliff Chambers	Harp Oil Co.
Brad Chase	Ronald Harrington
Don Chapman	Larry and Janet Harshfield
Garn Christensen	Joeff Harvey
Mackay Bar Corporation	Adolf Heinrich
Adena Cook	Valley County Commissioner
Blue Ribbon Coalition, Inc.	Anne Heissenbittel
Jeffrey Cook	National Forest Products Association
Wallace N. Cory	Robert Hitchcock
Lafe and Emma Cox	Evergreen Forest Products
Congressman Larry E. Craig	J. Charles Holden
	Idaho Association of Counties
	David L. Hook
	United Four-Wheel Drive Association
	Carl E. Hopt

The Public's Involvement

Humbolt National Forest
Forest Planner
Lissa Hunmel
Idaho State Auto Association
Idaho Mining Association
Dave Imel
Scott Imus
Mariah Association, Inc.
Ned Jackson
Ponderosa State Park
Ed Javorka
Gerald A. Jayne
Donald B. Jensen
Associated Logging Contractors
J. Jensen
Daines and Moore
Bryan Johnson
Craig Johnson
U.S. Bureau of Land Management
James J. Johnston
Donna Jones
Jack Kangas
Don Keller
Larry Kidd
Bill Kirk
Paul Kucera
Department of Fisheries
Nez Perce Tribe
John Kwader
Keith Lambrecht
Cliff Lee
Bob Lesser
Idaho Whitewater Association
John Lewinski
Shirley Lindstrom
Dick Linfoord
Echo: The Wilderness Co.
Alma Longstroth
John Loomis
Division of Environmental Studies
University of California, Davis
Dean A. Lydig
Charles Mabbott
Dan Magers
Donald Martin
U.S. Environmental Protection
Agency
D. Ralph Maughan, Ph.D.
Senator James McClure
Mike Medberry
McCall Public Library
David A. McClintock

William R. Meiners
Idaho Outfitters and Guides Licensing
Board
Dr. Carl M. Melina, M.D.
Tom Menton
Scott Mernitz
Camp, Dresser and McKee
Merl Mews
Idaho Department of Parks and
Recreation
Don and Dorothy Millen
Doris Milner
Ron Mitchell
Idaho Conservation League
Skip Morlock
George Neumeyer
Robert Newcomer
NOAA Fisheries
U.S. Department of Commerce
Dr. Herald S. Nokes
W. Hugh O'Riordan
Evergreen Forest Products
Anne Marie Oberly
Coeur-Thunder Mountain, Inc.
James Osborn, M.D.
William R. Osebold
Lawrence A. Papp
Jack Pickell
Dennis D. Pierce
McCall Chamber of Commerce
Paul A. Pierce
U.S. Bureau of Mines
Pioneer Mining Co.
Tom Pomeroy
Dennis Radocha
Hildegard Raeber
Chris Randolph
Idaho Power Company
Alan Reynolds
Blaine County Commissioner
D.I. Rising
Hadley B. Roberts
Mark A. Robinson
Noel Routson
Joe Sacawa
Mitch Sanchotena
Idaho Steelhead & Salmon Unlimited
Mike Schlegal
Idaho Department of Fish & Game
James D. Sears
Daniel Semler
Patti Shamblin
Shoshone-Bannock Tribe

Chapter VI

Shoshone-Paiute Tribes
T.E.R.O. Office
Mark A Sigrist
Perry Silver
Silver King Mines, Inc.
David Simmonds
Public Lands Task Force, McCall
Chapter
Idaho Conservation League
Rod Smith
KBCI-2
Dale A. Stirling
Heritage North
Glen Stout
Stout Logging
Steven Stuebner
Idaho Statesman
John R. Swanson
Senator Steven D. Symms
Targhee National Forest
Forest Planner
Captain Tom L. Taylor
Ada County Sheriff
Tracey Trent
Idaho Department of Fish & Game
U.S. Attorney
District of Idaho
U.S. Bureau of Land Management
Oregon State Office
U.S. Bureau of Land Management
Planning Coordinator, Boise District
Cutler Umbach
University of Idaho
Social Science Library
Valley County Commissioners
Dave Van de Graff
Boise Cascade Corporation
Ronald K. Vaughn
The Flying W
Dave Waitman
Leo Walton
Nancy Westcott
Jim Weber
Columbia River Inter-Tribal Fish
Commission
Charles Wellner
Western Forest Industries Association
Ken Weyers
Weyers Consulting
Winston Wiggins
Idaho Department of Lands
Karen Wilbur
Idaho Department of Health and
Welfare

Representative Gayle Wilde
Harry Wilson
Ron Wise
Dennis Wyatt
Secesh Meadows Property Owners
Association

Alphabetical List of Commenters on Draft Environmental Impact Statement

	Comments begin p. VI-	Response begins #__, p. VI-	
State of Idaho			
Attorney General's Office	55	87	143
Fish and Game, Department of	47	47	139
Governor's Office	11	1	135
Health and Welfare, Dept. of, (Water Quality Bureau)	29	28	138
Historical Society	57	--	--
Lands, Dept. of	43	45	139
Parks and Recreation, Dept. of	41	40	139
Transportation Department	45	--	--
Federal Agencies			
Environmental Protection Agency	59	88	143
Interior, Dept. of, (Office of Environmental Project Review)	69	114	147
Tribes			
Columbia River Inter-Tribal Fish Commission	107	184	154
Citizen Organizations			
Blue Ribbon Coalition, Inc.	106	182	154
Boise-Payette Backcountry Coalition	132	221	159
Friends of Idaho - Midwest	124	208	157
Inland Empire Public Lands Council	126	210	157
Northwest Timber Workers	90	145	150
The Wilderness Society	94	156	151
Businesses			
Coeur d'Alene Mines	100	171	153
Evergreen Forest Products	115	195	156
Hecla Mining Company	122	204	156
River Odysseys West	78	128	148
Individuals			
Abstein, Henry T. & Kathryn	82	132	148
Barker, Rodman N.	79	129	148
Bowen, Betsy	77	127	148
Chambers, Cliff	76	126	148
Cory, Wallace N.	72	--	--
cont'd			

	Comments begin p. VI-	Response begins #__, p. VI-
Individuals, cont'd		
Cox, Lafe & Emma	98	166 152
Davis, Del & Bonnie / Fritzer, George / Waitman, George	89	144 150
Fereday, Jeff / Hummel, Kay	128	213 158
Frasier, Jon R.	97	165 152
Harder, Vern & Bernice	80	130 148
Harshfield, Larry T. & Janet R.	92	147 150
Johnston, Jim	93	151 151
Mabbott, Charles	75	123 148
Meiners, William R.	104	179 153
Putman, Earl	83	135 149
Raeber, Hildegard	84	136 149
Rising, D.I.	71	118 147
Rohrbacher, Ray	102	177 153
Rosenbaum, Darlene & Robert	81	131 148
Sears, J.D.	85	137 149
Shamblin, Patricia	73	121 147
Smith, Jim	103	178 153
Swanson, John R.	91	146 150
Wilson, Harry E.	99	168 152
Yellow Pine residents	121	202 156

Major Issues, Concerns and Opportunities Raised by Commenters on DEIS and How the Forest Service Modified the FEIS in Response

Water Quality

The discussion of the SFSR as a "Water Quality Limited Segment" and "Stream Segment of Concern" under the Clean Water Act was expanded in the FEIS. To ensure against short-term degradation of water quality during construction, direct sediment removal from streams before construction, and additional measures to minimize sediment from construction activities were added to the selected alternative (RA).

Winter Access Effects on Wildlife

Numerous commentors expressed concern about the potential impact of winter access on wintering big game animals. In response, additional mitigating measures were evaluated and included in the selected alternative (RA).

Endangered Species

The potential effects on endangered species, notably the Rocky Mountain gray wolf, were of major concern of many commenters on the DEIS. Subsequent to the DEIS, the U.S. Fish and Wildlife Service provided a formal response to the biological opinion on the effect of implementing the selected alternative (RA). This response contained discretionary and mandatory measures to ensure the selected alternative would not jeopardize recovery of the endangered gray wolf. These measures were incorporated into the selected alternative.

Additional Alternatives

Some commenters recommended evaluation of additional alternatives. In response, three alternatives were analysed in more detail in the FEIS. These included alternative NA - a no action alternative that did not implement the Forest Plan direction, alternative EA - surfacing the existing SFSR Road with asphalt instead of relocating portions of the road away from the river as provided in the selected alternative (RA), alternative EG - surfacing the existing SFSR road with gravel. The State of Idaho recommended modifications to DEIS Alternative D. Upon analysis it was determined the recommended modifications would not result in significant savings in construction costs, would increase maintenance costs, and was otherwise similar to the selected alternative. Therefore the state's recommendation was not included as a separate alternative in the FEIS.

Sediment Analysis

A number of commenters on the DEIS raised concerns about the adequacy of the model used to evaluate the relative sediment production of various alternatives considered in the DEIS. In response, a new, state-of-the-art model was developed and used to provide a more comprehensive, quantitative sediment production analysis. Appendix H contains a description of the new model.

Cumulative Effects

The adequacy of the DEIS analysis of cumulative effects was raised as an issue by several commenters. In response, the FEIS provides a more comprehensive discussion of cumulative effects, including those associated with the SFSR Road and other activities in the drainage, e.g., the Warm Lake fire complex. Cumulative effects were analyzed in more detail using the new sediment model described above.

Toxic Spill Hazard

Many commenters expressed concern that paving the SFSR Road would increase the transport of toxic materials and, thereby, increase the risk of a toxic spill hazardous to fish and other aquatic life. In response, the FEIS provides for more stringent restrictions on the use of the SFSR Road for hauling toxic materials.

Commercial Use

Several commenters expressed concern that paving the SFSR Road would result in increased commercial use. In addition to the potential for increased risk of toxic spills discussed above, commenters worried about the safety hazard of mixing increased levels of commercial and noncommercial traffic. In response, the FEIS provides for more stringent restrictions on commercial use of the SFSR Road. In addition, the FEIS clarifies the limitations on commercial use inherent in road design, and clarifies the rationale for the expectation that Johnson Creek Road will continue to be the primary commercial access to Yellow Pine and mining operations.

Specific Comments on the Draft Environmental Impact Statement

Forty-six government agencies, organizations and individuals provided comments on the Draft Environmental Impact Statement. These comments are reproduced on the following pages. Each comment or group of related comments is assigned a number in the outside margin which corresponds to the number of the Forest response provided in the subsequent section.



OFFICE OF THE GOVERNOR

STATE CAPITOL

BOISE 83720

CECIL D. ANDRUS
GOVERNOR

(208) 334-2100

December 21, 1989

Veto J. LaSalle, Supervisor
Payette National Forest
P.O. Box 1026
McCall, ID 83638

Dear Mr. LaSalle:

The state of Idaho has reviewed the Draft Environmental Impact Statement (DEIS) for the South Fork of the Salmon River Road project. Comments by the Idaho Departments of Health and Welfare, Water Resources, Parks and Recreation, and Fish and Game and the Governor's Office have been incorporated to form a single statement and recommendation by the state of Idaho. Specific comments submitted by each agency are included.

The state of Idaho recommends that the U.S. Forest Service pursue a different alternative than the preferred alternative B. The state proposes alternative D with some modifications. Although alternative B reduces sediments to the river and allows year-round access on the South Fork Road, it is also less environmentally sensitive compared to the state's proposal when taking other factors into account. Compared to the others, alternative B would result in the greatest increases in traffic, recreation, threat from a toxic spill, need for road maintenance, risk for traffic accidents and potential for mass land movement.

Although alternative A would best meet all forest plan objectives except public access to Yellowpine (or congressional intent), a modified alternative D could accomplish the project goals and allay the state's concerns.

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The state's alternative includes suggestions and guidelines in addition to those in the DEIS. Seven general recommendations follow.

- 2 1. The Forest Service should prohibit the transport of all hazardous material on the South Fork Road with one exception: to allow fuels on an emergency basis only.

Restricting the transport of harmful materials on the South Fork Road will further enhance vehicle and passenger safety and will reduce or eliminate the risk potential for chemical or hazardous substance spills. The Forest Service should look beyond the list of hazardous materials defined in 40 CFR 172 and possibly include other materials or chemicals being hauled that are hazardous to the fishery.

- 3 2. The Forest Service should restrict use of the South Fork of the Salmon River Road to passenger vehicles and the delivery of essential goods to Yellowpine. Fuel transport to Yellowpine could be allowed in the winter by permit if the Johnson Creek Road is not available.

Large vehicles should be restricted to travel the Johnson Creek Road. Total weight restrictions on large vehicles would enhance driver safety, reduce the need for wide turnouts and reduce road maintenance costs and sediment caused by maintenance. Restrictions on large vehicles will also help address our concerns in recommendation #1.

- 4 3. Construction should avoid additional disturbance to cut slopes or activities that would create new cut slopes.

A high concern to the state of Idaho is the risk of increased erosion from cut slopes. A 14-foot roadway could reduce sediment if new cut slopes are not exposed. At sites where a 14-foot roadway would mandate a cut slope exposure, the roadway should not be widened. Traffic signs could advise drivers along these narrower sections of the road.

- 5 4. The Forest Service must maintain jurisdiction of the South Fork Road and control maintenance and snow removal. The final EIS should include maintenance and snow removal plans for the South Fork Salmon River Road. The plan should state who will do maintenance and where snow will be stored. It should also include provisions for road closure when the South Fork Road becomes too dangerous for travel.

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Page 3

Winter access on the South Fork of the Salmon River should be dependent upon the availability of other routes. The Johnson Creek Road should be the preferred route as long as that road remains open. It does not seem unreasonable to expect residents of Yellowpine or the mining community to make appropriate plans in anticipation of winter travel restrictions.

6

5. Actions should result in the long-term improvement of fish habitat.

The state of Idaho recommends that the design criteria place priority importance on sediment reduction. If sediment reduction conflicts with other needs, measures to mitigate those other needs should be taken. Sediment reduction must come first.

7

The South Fork of the Salmon River is a water quality limited segment. The EIS should discuss how the road project will address the water quality limited issue. Long-term impairment of water quality limited segments is not permissible.

8

6. The proposed road improvement should not distract from the current recreational experience found in the South Fork of the Salmon River.

Recreation access to the South Fork of the Salmon River merits further discussion in the EIS. Unrestricted recreational foot travel by individuals on fill slopes will increase erosion as will unrestricted put-in and take-out points for white-water boating.

9

User groups now using the South Fork of the Salmon River will be displaced if recreation activity increases rapidly. In addition, Idaho outdoor sportsmen have stated in recent surveys that natural beauty, water quality, solitude and wilderness attributes are of primary importance. Crowded conditions and paved highways run counter to those objectives. Changes in recreation use can be mitigated by slowing the rate of increase, dispersing recreation, and diverting commercial traffic (except for essential services to Yellowpine) to the Johnson Creek Road.

10

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Page 4

7. Other sediment-producing areas should be in the scope of the project.

11

The bypass road to Sister Creek will reduce sediment to the river. The state supports this bypass as a graveled surface since it will not deliver sediment. A graveled road with proper signing should also result in lower vehicle speed, greater safety, and preservation of a more natural character of the land. Drivers will realize they are on a single lane forest road, not a paved highway that could encourage higher speeds.

12

Alternative D as modified will be more cost-effective to implement and to reduce sediment. These savings will free up resources otherwise obligated under alternative B. With the additional resources made available, the state of Idaho suggests that other sediment problems nearby be addressed. Specifically, the one and one-half mile section of the South Fork Road south of the Warm Lake Highway should be closed and converted to a foot trail. A parallel road (#427) could easily be the designated route south of the Warm Lake Highway toward Stolle Meadows (see map).


13

Improvements to the Johnson Creek road and the East Fork of the South Fork road that reduce sediment would also help the fish and provide better transportation to the area mines. However, the state feels such major improvements necessitate a separate Environmental Impact Statement. In fact, an EIS that deals with the growing mining development and transportation issues in the South Fork Salmon Basin is an inevitability.

Other specific comments by agency are enclosed. Those comments will provide additional justification for actions proposed by the state of Idaho.

If we can be of further assistance, please contact Mr. Andy Brunelle of my staff at 334-2100 or Mr. Will Reid of the Idaho Department of Fish and Game at 334-3791.

Sincerely,


Cecil D. Andrus
Governor

CDA:abl
cc: Wil Reid
a/c/f
L1219.01

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages I-2

The Project Area: Southern boundary of the area is at the junction of the South Fork Road (#474) and the Warm Lake highway.

RECOMMENDATION

Project area's southern border should be extended south about 2 1/2 miles to the junction of FS roads 474 and 427. FS road 474 from the Warm Lake highway south to the junction with FS road 427 could be put to bed in order to reduce sediment. FS road 427 meets the Warm Lake Highway very close to the Knox Ranch bypass.

14

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT.

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages II-2

Discussion: Road widths other than 14 foot. A 14-foot width will minimize ground disturbance.

RECOMMENDATION

Areas where widening road to 14 feet should be re-examined. Traffic flow in narrow stretches should be less a consideration than adding a new cut and fill slopes. Narrow sections can be mitigated with traffic control measures.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages II-2

Discussion: Winter access options--only two options on winter access are presented.

RECOMMENDATION

Winter access on the South Fork road should depend on the Johnson Creek and Landmark summit roads. When the latter are open, the South Fork road should be closed and vice versa.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages II-5

Discussion: Recreation access--loss of access on portions of closed road.

RECOMMENDATION

Forest Service needs to identify and construct a "put in" point for rafters and kayakers near southern end of project area, plus appropriate places for take out. Rafting and kayaking will grow in popularity on this river with a paved road.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

17

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages II-5 and Appendix A

Discussion: Recreation access: Cabin Creek access proposed by reconstructing Pioneer Road. Removal of culverts on Cabin Creek will preclude access to those wanting to cross Cabin Creek.

RECOMMENDATION

Reconstructing Pioneer Road from the Knox Ranch bypass along Cabin Creek should be reconsidered. Ideally, the road should be closed and put to bed for good. A trail head and foot bridge should be constructed at Cabin Creek as part of converting that section of the road to trail.,

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages II-5

Discussion: Discussion is lacking with regards to enforcement mechanisms and approaches to ensure safety on the road.

RECOMMENDATION

Discussion needed on how road safety can be enhanced through enforcement mechanisms and education.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages II-5

Discussion: Safety--No discussion of safety problems arising from increased use and pressure of large vehicles that will use road.

RECOMMENDATION

Discuss effects of restricting traffic to only passenger vehicles and non-commercial traffic, making South Fork Road primarily recreation and Johnson Creek for large vehicles.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

20

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages II-6

Discussion: Snow plowing--No discussion over who will have jurisdiction over plowing.

RECOMMENDATION

Discuss who will make decision on plowing the road and how it will be plowed to minimize sediment.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages III-2

Discussion: Access: User groups and their issues of concern are identified. Missing is discussion of road management options apparently defend until after the road project is complete. Especially needed is a big picture analysis of transportation needs in the drainage. (A basin-wide EIS on mining developments and transportation issues is an inevitability.)

22

RECOMMENDATION

Discuss various options for road management such as: (1) limiting South Fork Road to smaller non-commercial vehicles only, (2) allowing commercial vehicles to use road that have already delivered their product, and (3) managing traffic flow in conjunction with Johnson Creek road.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages III-3

Discussion: Affected road users.

RECOMMENDATION

Discussion needed to address increased use of river by kayakers and rafters which will result with paved road.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages III-4

Discussion: Life-cycle cost analysis includes user costs without a justification relating it to the best way to paving the road to reduce sediment.

RECOMMENDATION

User costs need not be considered in the analysis and determining efficiency in road projects. At the least, including user costs needs justification.

24

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages IV-1

Discussion: Recreation users--DEIS says recreation use will increase with paving. The DEIS states that recreation support facilities currently have low to moderate use.

RECOMMENDATION

Discuss recreation developments that will have to take place to keep pace with use: campgrounds, picnic areas, river put-in and take-out points, fisherman access when the time comes, while balancing these demands with the semi-private nature of the area.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages IV-11

Discussion: Sediment controls are discussed. Not mentioned is sediment delivery that will be caused by foot traffic on the banks of the river by fishermen, boaters, and sightseers, etc.

RECOMMENDATION

Evaluate the construction of stairs to the river at appropriate points like campgrounds, and put in and take out points for boaters.

26

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT .

SOUTH FORK SALMON RIVER ROAD PROJECT (DECEMBER, 1989)

COMMENT

Citation: Pages IV-4

Discussion: Life-cycle cost analysis--Inclusion of user costs, which are arguably not relevant to the decision, makes Alternative B lower than Alternative D.

RECOMMENDATION

Justify relevancy of including user costs to the main issue: reducing sediment.

REVIEWER

State Agency: Office of the Governor

Contact Person: Andy Brunelle Phone: 334-2100



State of Idaho
DEPARTMENT OF HEALTH AND WELFARE
Division of Environmental Quality

450 W. State Street
Boise, Idaho 83720

CECIL D. ANDRUS
Governor

RICHARD P. DONOVAN
Director

December 13, 1989

MEMORANDUM:

TO: Will Reid, Fisheries Biologist
FROM: Susan Martin, Manager, Surface Water Section *by SB*
SUBJECT: Comments of SFSR Road Reconstruction DEIS

Attached are the Water Quality Bureau's comments on the SFSR Road Reconstruction DEIS. Our comments are specific to water quality concerns, although exception could be taken with a NEPA document which states that decisions will be made "that best meet the intent of the congressional appropriation." I assume this matter will be dealt with in the general state comments. As the attached comments confer, the Bureau is concerned with the lack of attention given in the DEIS to stabilization of cut and fill slopes, the potential for transport of toxics by this route to the Stibnite mines and any further impairment of the salmonid spawning beneficial use on two water quality limited segments.

If you need any clarification of the comments or additional information, please contact Geoff Harvey, 334-5867.

SBM:kjb

Enclosures

cc: Craig Shephard
Trish Khlar
Karen Wilbur
Joe Nagel
Al Murrey
Geoff Harvey



REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK SALMON RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: Road cut and fill slope stabilization requires further discussion in DEIS.

CITATION: Chapter II, page 3, Road prism Design and Chapter IV, page 11.

DISCUSSION:

The DEIS states the "cut and fill slopes and stream crossings will be stabilized to the fullest extent possible with current knowledge and reasonable cost." This treatment is common to all alternatives. Road surface only accounts for 15-20% of the sediment yield from a road prism. (Burrows et.al. 1983; Burrows et.al. 1985) Stabilization of cut and fill slopes is therefore, critical to one of the stated objectives of the project, reducing sedimentation to the SFSR. The DEIS does not adequately address how cut and fill slopes will be stabilized. Since these are the major sediment producers of the road prism, the DEIS should fully explain how the cut and fill slopes will be stabilized. Assurance of stabilization should be provided since the road has existed for over forty years, and numerous state of the art stabilization techniques have been attempted and failed. In spite of this, inspection of the road prism in treated and untreated areas will demonstrate to the observer the accelerated erosion from the road cut and fill slopes.

RECOMMENDATION:

Adequately explain how cut and fill slopes are to be stabilized. Detail the technology to be used over and above that now in use. (Appendix B).

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality Bureau

Contact: Geoff Harvey Phone: 334-5867

REFERENCES:

Burrows, E.R. Jr., F.J. Watts., J.G. King, D.F. Haber, D. Hansen and G. Flerchinger 1983. Measurement of the relative effectiveness of rocked roads and ditches in reducing surface erosion, Rainy Day Road, Nez Perce National Forest. In house Report, Intermountain Station, 53p.; Burrows, E.R. Jr, F.J. Watts, J.G. King and D. Hansen 1985. Relative effectiveness of fill slope treatments in reducing surface erosion, Horse Creek Road, Nez Perce National Forest. In House Report Intermountain Station.

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK SALMON RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: SFSR reaches adjacent to the reconstruction project are water quality limited segments due to high sedimentation from past activities. Accordingly these waters may not be further degraded in the long term by any project. Short term impacts must be carefully evaluated to insure they do not contribute to the problem.

CITATION: Chapter IV, page 18. Irreversible or Irretrievable Commitment of Resources and page 19 Unavoidable Adverse Environmental Impacts.

DISCUSSION:

The DEIS states "Project mitigation and constraints will insure that losses of resources will be kept to a minimum". The SFSR is classified as water quality limited from its headwaters to the Secesh confluence. Two of the three water quality limited segments of this reach parallel the road corridor. Salmonid spawning is the beneficial use limited and the DEIS indicates that salmonid spawning habitat would be affected over the short term. Additional long term impairment of these segments is not permissible.

RECOMMENDATION:

Explain in the DEIS actions to mitigate in advance any increase in sedimentation due to road construction.

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality
Bureau
Contact: Geoff Harvey Phone: 334-5867

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK SALMON RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: Snow piling as a result of snow removal could over saturate fill slopes.

CITATION: Chapter IV, page 13, Winter Access Management as it affects Water Quality.

DISCUSSION:

Snow removal will necessitate piling of snow on fill slopes. The DEIS does not adequately address the question of over saturation of fill slopes due to snow piling. Fill slopes can become saturated and fail under the burden of excessive water applied as snow. The DEIS should consider this consequence of providing winter access.

RECOMMENDATION:

Assess the hazard of fill slope saturation as a consequence of snow removal related piling.

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality
Bureau

Contact: Geoff Harvey Phone: 334-5867

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK SALMON RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: Monitoring plan outlined in Appendix D employs inadequate techniques.

CITATION: Appendix D Monitoring Plan

DISCUSSION:

Certain approaches taken in the monitoring plan are not valid. Fish population monitoring is too susceptible to other factors such as weather and fishing pressure. We would suggest using percent fines in spawning areas, and artificial redd/ DO techniques developed by DEQ. Channel cross-sections is not a sensitive enough measure of sediment movement. We suggest tributary monitoring as carried out by Megahan (1982). In batholith materials measurement of turbidity is not likely to show sediment movement unless it is drastic. These approaches need to be reconsidered to develop a useful monitoring plan.

RECOMMENDATION:

Re-work monitoring plans based on techniques which will show sediment movement.

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality
Bureau

Contact: Geoff Harvey Phone: 334-5867

REFERENCES:

Megahan, W.F. 1982. Channel sediment storage behind obstructions in forested drainage basins draining the granitic bedrock of the Idaho batholith. pp 114-121, In: Swanston, F.J., Janda, T. Dunne and D.N. Swanston eds, USDA Forest Service, Gen. Tech. Rpt PNW-141.

---IEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: The preferred alternative, Alternative B, will result in the greatest adverse environmental impacts to the South Fork Salmon River.

CITATIONS: Chapter IV - Consequences of the Alternatives

DISCUSSION:

The consequences of implementing Alternative B, as described in the draft Environmental Impact Statement (DEIS) in terms of the possible environmental impacts, will result in the greatest increase in access, the greatest increase in traffic, the greatest increase in recreational use and therefore recreational impacts, the greatest threat from a toxic chemical spill, the greatest access to fish and therefore potential to impact fish populations, and the greatest impact to water quality from uncontrolled waste disposal and chemical spills. Furthermore, the DEIS states that naturally occurring sediment accounts for the vast majority of the sediment in the system, and that sediment inputs into the SFSR from the watershed are many times the amount that will be reduced by implementing Alternative B.

RECOMMENDATION:

32

The DEIS should discuss and disclose the rationale for selecting a preferred alternative that results in the greatest short term and long term impacts to the South Fork Salmon River, and results in the greatest threat to the river, while only mitigating an insignificant source of sediment within the watershed.

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality Bureau

Contact: Trish Klahr

Phone: 334-3823

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: The Forest Service's regulation, control and permitting of the transportation and hauling of supplies on the SFSR road is inadequate and does not protect the water quality and the fishery of the SFSR.

DISCUSSION:

The Forest Service's regulation of chemical and fuel transportation on the SFSR is inadequate and does not protect water quality due to the following:

- 1) Non-commercial hauling is not regulated.
- 2) Potentially toxic materials are not regulated. For instance, fertilizer, which would result in an instantaneous fish kill upon reaching the water, can be hauled without a permit.
- 3) Commercial and non-commercial hauling of fuels is permitted on the SFSR road.
- 4) The permit requirements are inadequate for the given circumstances, which include a fishery of national significance located adjacent to a narrow, winding road which is proposed to be paved.

RECOMMENDATIONS:

Special provisions and requirements must be developed for the transportation of all chemicals and fuels on the South Fork Salmon River road, including cement and fertilizer. All haulers, commercial and non-commercial, must obtain permits.

The permit requirements, as listed in the Payette National Forest Land and Resource Management Plan are inadequate for a sensitive situation such as the South Fork Salmon River (IV-242). Site specific permit requirements need to be developed and should include, but not be limited to:

- requiring all transport to be during daylight hours
- reduce the maximum speed allowed from 30 mph to 15 mph

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality Bureau

Contact: Trish Klahr

Phone: 334-3823

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: The DEIS does not accurately disclose the cumulative effects to fish with respect to toxics.

CITATION: IV -5 through IV - 9; Table IV-4

DISCUSSION:

The preferred alternative, Alternative B, will greatly increase the threat and impacts from toxics to the SFSR over the existing condition, and over the other alternatives due to the following:

1) The current road is the least desirable access route to the mining districts for chemical and fuel supply haulers due in part to the road's deteriorated condition. Consequently, the SFSR road receives very limited chemical hauling traffic. After implementing Alternative B, which includes rerouting and paving, the SFSR road will become a more desirable route for the chemical and fuel haulers, potentially more desirable than the Johnson Creek route. The DEIS substantiates this argument by stating that Alternative B will result in the greatest increase in access and road use.

2) Furthermore, the current road is not usable by commercial haulers during the winter. Following implementation of Alternative B, the commercial haulers will be allowed to use the road during the winter, resulting in an increase in the risk of chemical spills as a result of an extended hauling season and hauling under adverse weather conditions (IV-14).

3) The current road surface is permeable and would not transport a spill as readily to the SFSR. Alternative B, the only alternative having a completely paved surface, would not allow for any absorption of spilled chemicals and would also speed delivery of chemicals to the river (IV-14).

4) The current road is insloped which facilitates collection and mitigation of chemical spills. Alternative B would be outsloped resulting in a dispersed spill which greatly complicates cleanup and mitigation efforts.

In summary, the proposed alternative greatly increases the threat of a chemical spill to the SFSR over the current situation and over all other proposed alternatives as a result of increased use, extended season of use, more likelihood of spills during adverse winter travel conditions, increased delivery rate of spills to the river, and complicating road design features that impede spill recovery and mitigation.

(continued)

RECOMMENDATION:

Table IV-4 needs to be changed to reflect that the impact to the SFSR from toxics will be greater under Alternative B than under current conditions. The DEIS needs to adequately and realistically account for the threats to the SFSR water quality and fishery from the increased threat of a toxic spill as a result of implementing the preferred alternative.

34

REVIEWER

State Agency: Division of Environmental Quality, Water Quality
Bureau

Contact: Trish Klahr

Phone: 334-3823

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK RIVER ROAD RECONSTRUCTION PROJECT

COMMENT: The DEIS does not discuss the irreversible and irretrievable impacts to the SFSR fishery resource as a result of a spill into the SFSR.

CITATIONS: PAGES IV - 18,19

DISCUSSION:

One (1) chemical spill into the South Fork Salmon River could potentially decimate and eliminate forever the genetically unique wild anadromous fishery indigenous to the South Fork Salmon River.

RECOMMENDATION:

The impact to the SFSR fishery as a result of a disastrous chemical spill should be disclosed and discussed in the EIS with reference to the fact that the probability of such an incident is greatly increased after implementation of Alternative B.

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality
Bureau

Contact: Trish Klahr

Phone: 334-3823

REVIEW OF DRAFT ENVIRONMENTAL IMPACT STATEMENT
SOUTH FORK RIVER ROAD RECONSTRUCTION PROJECT

CITATIONS: Comment 1 (IV-15); Comment 2 (Appendix B); Comment 3 (II-5); Comment 4 (III-8)

DISCUSSION:

1) It is stated in the DEIS that "Other projects in the basin occurring within one to five years may add to sediment, if they occur." It is not clear what is meant by "other projects" All projects within one to fifty years will add sediment if not carried out properly. Also, the improved road access will increase the demand for "other projects", such as timber harvesting. By improving road access, the Forest Service may be prompting "other projects" in the South Fork Salmon River Basin. The beneficial uses of the South Fork Salmon River have already been injured and remain impaired because of the sediment loads caused by previous logging and road construction activities.

36

2) Most soil erosion occurring from road construction originates from the installation of cut and fill slopes. Who will supervise the installation of the erosion control methods? To whose standards will the erosion control treatments be installed? Will work be done during wet periods? Will there be any on-site erosion control measures taken while the cut or fill slope is being constructed to prevent erosion from sudden storm events?

37

3) The South Fork of the Salmon River is sensitive to disturbance. The increased recreation along the river is not adequately addressed in the DEIS. The proposed mitigation work, "visitor information points", does not provide in-kind replacement for disturbed fish habitat and riparian areas.

38

4) The DEIS addresses commercial hauling of toxic materials. What about non-commercial transport? Will non-commercial transport of toxic materials be re-evaluated and will it be regulated? Will the transport of fertilizer and concrete mix be allowed without a permit?

39

RECOMMENDATION:

The "other projects" that may add sediment to the river should not be allowed unless it is demonstrated that mitigation work done before and during the projects will reduce sedimentation to the basin. Erosion control treatments should be strictly supervised by Forest Service personnel at all times of construction. The installation of erosion control treatments should be carried out to the highest standard attainable. Non-commercial transport of toxic materials should be regulated by a permit system.

REVIEWER:

State Agency: Division of Environmental Quality, Water Quality Bureau

Contact: Karen Wilbur Phone: 334-3823



IDAHO DEPARTMENT
OF
PARKS & RECREATION



CECIL D. ANDRUS
Governor

YVONNE S. FERRELL
Director

December 13, 1989

Will Reid
Department of Fish and Game
600 S. Walnut
Box 25
Boise, ID 83707

Dear Mr. Reid:

These are our comments concerning the South Fork Salmon Road Draft Environmental Impact Statement.

There are alternative ways to provide access to the community of Yellow Pine other than by paving the South Fork Salmon Road that have not been discussed in this draft EIS. Under NEPA all alternatives need to be explored.

40

The Johnson Creek road is a shorter route to Yellow Pine. If the Johnson Creek road is the primary road for access to the mines and the community of Yellow Pine, then more consideration should be given to paving it. Johnson Creek does not contain the high quality salmon spawning habitat that the South Fork does.

41

Paving the South Fork road will attract more use, especially by the miners and loggers, and will in effect make it the primary access road. It would seem that by increasing the number of heavy vehicle use the number of accidents, fuel spills or jack-knifed logging trucks spilling their loads on the road and in the river would also increase. This is of major concern where the road parallels the river as it goes past Poverty Flats, a very important salmon spawning habitat for the entire Salmon River drainage. There needs to be vehicle size and weight restrictions along with chemical transport restrictions on this road. If a fuel spill such as the one that occurred on Johnson Creek this past fall were to occur on the South Fork Salmon, it would be even more of a disaster. There is no reference to any type of vehicular restrictions in this draft EIS. Preserving the fishery for the Salmon River is an important concern for all of Idaho's citizens and visitors.

42

STATEHOUSE MAIL
BOISE, IDAHO 83720
(208) 334-2154

Street Address
2177 Warm Springs Ave.



43

Another concern is the possibility of continued funding after construction. If the road is paved, traffic will increase and the need for road repairs will also increase, especially if those traveling on the road are heavy logging trucks and fuel rigs.

44

The operational needs of the mines need to be addressed such as the types and weights of the vehicles, and a use schedule. This was not adequately discussed in this draft EIS.

Thank you for coordinating our comments.

Sincerely,

Yvonne Ferrell byjfl

Yvonne S. Ferrell
Director

mjl

IDAHO DEPARTMENT OF LANDS

STATEHOUSE, BOISE, IDAHO 83720

STANLEY F. HAMILTON
DIRECTOR

BOARD OF LAND
COMMISSIONERS
CECIL D. ANDRUS
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PETE T. CENARRUSA
Secretary of State
JIM JONES
Attorney General
J.D. WILLIAMS
State Auditor
JERRY L. EVANS
Sup't. of Public
Instruction

M E M O R A N D U M

TO: Jerry Conley, Director
Department of Fish and Game

FROM: Stanley F. Hamilton
Department of Lands

DATE: December 13, 1989

SUBJECT: South Fork Salmon River Road

The following are our comments on the Payette National Forest Draft Environmental Impact Statement analyzing the various alternatives designed to reduce sediment delivery from the South Fork Salmon River Road while maintaining access to the various users.

1. Maintenance is a major element in reducing surface erosion and associated delivery of sediment from road surfaces, particularly if an alternative other than complete asphalt surface is selected. Maintenance is mentioned in the document, but actual maintenance plans are not included. The level of maintenance anticipated for each particular alternative will impact whether the alternative should be selected.

2. Table IV-1, Life Cycle Cost Analysis by Alternative, page IV-4, lists the estimated twenty year costs associated with each alternative. Maintenance costs associated with these alternatives appear optimistic and bear review. Likewise, the initial construction costs for alternatives A, B, and C seem surprisingly similar and should be examined.

DEC 18 1989

KEEP IDAHO GREEN
PREVENT WILDFIRE

Chapter VI

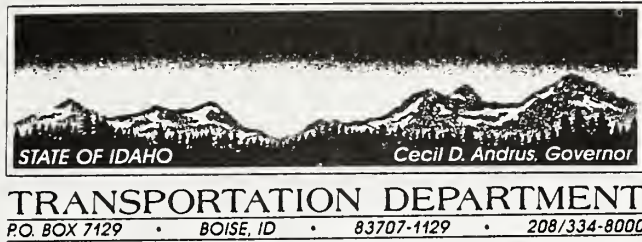
Jerry Conley
December 13, 1989
Page 2

Either paving the entire length of the road (Alternative B), or graveling those portions with an appropriate buffer and asphaltting those near the river (alternative D) will produce similar reductions in sediment delivery if the road relocated as proposed. Asphaltting will reduce long term maintenance while eliminating future pressures to asphalt the remainder should only a portion be paved as a part of this project.

If I can be of further assistance, let me know.

SFH/pks

A handwritten signature in dark ink, appearing to be 'Shaw' or similar, with a stylized flourish at the end.



December 7, 1989

Jerry M. Conley, Director
Idaho Department of Fish and Game
600 South Walnut
Boise, Idaho 83707

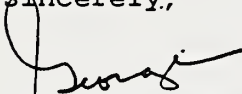
Re: South Fork Salmon River Road

Dear Mr. Conley: 

Not having received a copy of the Draft Environmental Impact Statement for the South Fork of the Salmon River Road Reconstruction, we are not in a position to comment on it.

The South Fork Road is not a part of the State or Federal-aid Highway System and is outside the jurisdiction of the Transportation Department; therefore, we would normally not comment on the Impact Statement.

Sincerely,


G. J. NEUMAYER
Director (Acting)

GJN:JRD:ps/mc:s89~1026



DEC 13 1989



IDAHO FISH & GAME

600 South Walnut / Box 25
Boise, Idaho 83707

December 19, 1989

Mr. Veto J. LaSalle
Forest Supervisor
U.S. Dept. of Agriculture
Payette National Forest
P. O. Box 1026
McCall, ID 83638

Re: South Fork of the Salmon River Road Project/Draft Environmental
Impact Statement

Dear Mr. LaSalle:

Idaho Department of Fish and Game personnel have reviewed the Draft Environmental Impact Statement for the South Fork of the Salmon River Road Project as prepared by the U.S. Department of Agriculture, Payette National Forest.

In general, it appears that the U.S. Forest Service has put together a rush effort to meet a perceived intent of Congress. The document is not well prepared and lacks complete documentation of how various project objectives, design and mitigation will be accomplished. It also appears that the Forest Service may not have evaluated all potential alternatives or, at least, built in all needed constraints.

With proper design, a 14-foot roadway could protect resource values. The ability of the U.S. Forest Service to stabilize and revegetate cut and fill slopes seems to be the primary concern of those individuals reviewing the document. Increased traffic and higher speeds will further enhance the probability of accidents and toxic spills occurring on the road.

The selected alternative will increase use in the area. The Forest Service seems to feel that the type of recreation change that will occur is also desirable. However, the recently completed fisherman and

Cecil D. Andrus / Governor
Jerry M. Conley / Director



Chapter VI

Mr. Veto J. LaSalle, Supervisor
December 19, 1989
Page 2

hunter opinion and preference surveys indicate that Idaho sportsmen prefer more semi-primitive, less crowded and more aesthetic types of outdoor experience than that envisioned by the U.S. Forest Service.

47 Fish and Game personnel are also extremely concerned about the potential for commercial hauling of material harmful to fish and their environment. It is our position that toxic and hazardous chemicals should be prohibited from the South Fork of the Salmon River Road.

48 Reviewers have stated a concern that paving the South Fork of the Salmon River Road will make it economically feasible for Valley County to accept control of the South Fork Salmon Road, resulting in loss of maintenance and snow removal control by the U.S. Forest Service. If Valley County should assume control of the South Fork Salmon Road, the Forest Service would not likely meet the goals outlined in the DEIS and RMP.

49 The Idaho Department of Fish and Game recommends an alternative or constraints that would modify existing alternatives to reduce sediment production from the entire drainage, eliminate the need for new cut-slopes, prohibit commercial hauling of hazardous materials and minimize disturbance to existing soils.

Alternative A best meets the objectives of the Idaho Department of Fish and Game in the South Fork of the Salmon River. However, a modified alternative B or D could also meet fish and wildlife goals. Modifications needed are presented under the Specific Comment Section.

Specific Comment:

Page 1-2 The Project Area

50 The project area should include other roads and sediment sources in the South Fork of the Salmon River drainage. If the objective of the Forest Service is to reduce, to the maximum extent possible, sediment contributions to the South Fork, then all road systems should be addressed.

Page II-2 Road Width Other than 14 Feet

51 A 14-foot roadway, managed as a single track road, with turnouts, use restrictions and additional constraints, could best meet the objectives of all parties. A single track road with turnouts could maintain most of the semi-primitive attributes that Idaho sportsmen have given as a high priority. If this option is to fulfill expectations, the Forest Service must place additional constraints on the project.

Mr. Veto J. LaSalle, Supervisor
December 19, 1989
Page 3

Page II-2 Other Design Vehicles:

There is no need to design a need to accommodate low-boy traffic with a 100,000 pound load. The South Fork of the Salmon River Road should be restricted to passenger-type vehicles only, except in extreme emergencies. It does not seem unreasonable to expect the mining community to implement a planning procedure that would have the transport of all large equipment in place prior to closure of the Johnson Creek Road by extreme snow. Removal of heavy equipment from the South Fork Salmon River Road will also reduce the need for maintenance. Should the need arise to transport large heavy equipment over the South Fork Salmon River Road, a temporary closure can be implemented until that equipment is off the road.

52

Page II-3 Constraints

Additional constraints needed include:

1. Prohibiting the transport of all hazardous chemicals except fuel in extreme emergency.
2. Avoid additional disturbance of cutslopes by placing reduced sediment production as the number one priority.
3. Commercial use of the South Fork of the Salmon River Road will be restricted to essential services to the community of Yellowpine. Fuel transport will be restricted to extreme emergencies only.
4. Any action must result in the long-term improvement of fish habitat.
5. Project activities will strive to maintain semi-primitive nature of access.

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Page II-3 Design Features

Public Safety and Sediment reduction may not always be compatible goals. Where they appear as conflicting objectives, the reduction in sediment should take priority. Other mitigative measures can be employed to reduce impacts to public safety. With only one minor accident per year, there does not seem to be much of a safety problem.

58

The Forest Service should maintain control of maintenance and snow removal.

59

The stabilization of cut and fill slopes will probably be the single most important factor determining the success or failure of this project. This design feature should, therefore, go beyond "current knowledge and reasonable cost." If any risk exists that a cut-slope cannot be stabilized, the project should avoid disturbance of that slope.

60

Chapter VI

Mr. Veto J. LaSalle, Supervisor
December 19, 1989
Page 4

Page II-4

61 A road designed to accommodate heavy traffic of over 100,000 pound GVW will run counter to design criteria to minimize maintenance costs and sediment produced by road maintenance. Design criteria should specify the Johnson Creek Road for this type of traffic.

62 To accommodate a variety of users, trails should be constructed to handle mountain bike use.

Page II-5 Mitigation

Fish and Wildlife

63 Restrictions placed on the type of commercial use permitted on the South Fork Salmon River Road will help reduce impacts to wildlife.

Recreation Access

64 Recent public opinion surveys conducted by the Idaho Department of Fish and Game indicates that both fishermen and hunters rate factors such as, "natural beauty, water quality, solitude and wilderness characteristics" as extremely important--harvesting fish and killing an animal did not rate nearly as high. Therefore, recreation should be mitigated by efforts to maintain existing semi-primitive attributes.

Page II-5

Safety

65 Safety should be a concern secondary to reduction of sediment. Widening of curves should be avoided where it may destabilize cut-slopes.

Chapter 3

Affected Environment

Page III-2

66 The cost-benefit, risk of increasing road factor by destabilizing slopes and the displacement of recreationalists and wildlife seems quite severe for the benefit of seven vehicles per day.

It appears that the current conditions are conducive to safe travel with only one minor traffic accident per year.

Mr. Veto J. LaSalle, Supervisor
December 19, 1989
Page 5

Page III-2

Recent public opinion survey, conducted by the Idaho Department of Fish and Game, indicates that the South Fork of the Salmon offers the type of experience wanted by most Idaho fishermen and hunters. In addition, an overwhelming majority of nonresident sportsmen to Idaho expect a primitive experience. Further encroachment into semi-primitive recreation areas will cause crowding, and a reduced experience at other areas such as Bear Valley and Deadwood.

67

Those individuals that do not wish to drive long distances on gravel roads have many, and increasing numbers of, campgrounds throughout the area.

Page III-3

Access and Others Affected Road Users

Miners and Mining Companies

The mining companies working in the vicinity of the South Fork of the Salmon River and those that use the South Fork Salmon River Road, do so under the direction that they shall minimize impacts to the environment. The Idaho Department of Fish and Game proposes that it is not unreasonable for those miners and their employers to have adequate planning procedures to eliminate commercial winter travel needs.

68

Sportsmen and Environmentalists

These should be addressed as two separate groups. They are, at last, as different as Yellowpine residents and miners.

69

Page III-9 Erosion and Sediment

Transport

Under natural conditions, a river system can accommodate these storm events that helped create the basin. Disturbance of the natural system creates an unbalanced situation where sediment input will be greater than sediment output. Improper forest management has allowed an unnatural situation to occur. When that major rain-on-snow event did occur, mass land failure caused extreme movement into the river. The Forest Service seems bent on blaming nature for the catastrophe that occurred in the South Fork Drainage when in fact, it was poor management. It is not the intent of the Idaho Department of Fish and Game to continue to lay blame on the Forest Service. However, understanding that the events leading up to the sedimentation of the South Fork of the Salmon were primarily man-caused might lead one to slightly different solutions for sediment removal.

70

Chapter VI

Mr. Veto J. LaSalle, Supervisor
December 19, 1989
Page 6

Page III-10

- 71 The DEIS should describe the importance of riparian areas to filtration of sediment and to stream stability.

Page III-11

- 72 Of equal importance to healing the South Fork Salmon Road is the healing of scars created by fire suppression efforts.

Chapter IV

Page IV-1

Access

- 73 Modification of Alternative D would allow recreational use to increase at a more moderate rate.

Page IV-2

- 74 The choice of words the Forest Service uses to describe acceptance of various alternatives by various factions gives a biased view to the reader. For example, most Yellowpine residents moved into that area prior to opening the road to year-around access. Therefore, closing the South Fork Road cannot be "totally unacceptable," especially when one considers the fact that access through Johnson Creek would be open most of the year.

- 75 In addition, the mining community should, as pointed out earlier, plan more efficiently for commercial access to their mines.

Sportspersons and environmentalists

- 76 Again, these are two separate groups. The sportsmen may be interested primarily in hunting and fishing. However, as recent surveys indicate, clean water, natural beauty, and remoteness are of greater value than harvest. The concern of environmentalists for the South Fork of the Salmon River go far beyond "emotional attachment." These groups are far more interested in the environmental health of the system than many so-called "professionals." Alternative B is the worst alternative for sportsmen, environmentalists, and Native Americans.

Cost Efficiency

Page IV-4 Table IV-1

- 77 We do not understand the difference between the Alternative A cost as expressed in the RMP, \$1.0 million versus the \$5.1 million presented in the DEIS.

Mr. Veto J. LaSalle, Supervisor
December 19, 1989
Page 7

Page IV-5

Sediment as It Affects Fish

Sediment also reduces overwinter survival for parr.

78

Page IV-6

Access as it Affects Fish

The loss of wild populations of fish cannot be mitigated.

79

Page IV-7 Cumulative Sediment Impacts

The U.S. Forest Service has the opportunity to make an impact on sediment recruitment to the South Fork of the Salmon River. However, they must address all sources of sediment production and not concentrate on only one minor source.

80

Page IV-8

As proposed, the amount of sediment produced by new construction has the potential to be extreme. The Forest Service should identify this as a risk.

Page IV-9 Table IV-4

The DEIS does not display overall sediment potentials for each of the alternatives. Further, road surface erosion is presented separately from cutbank erosion and fill slopes are not addressed. This format makes it impossible to compare alternatives, especially when road surface erosion is displayed as percent reduction, and cutbank erosion is merely ranked. The DEIS should display quantitative amounts of sediment yield for each alternative.

81

Page IV-11 Water Quality

The entire document relies on the ability of the Forest Service to stabilize and vegetate cut-slopes. As pointed out by the Forest Service, stabilization is difficult and revegetation nearly impossible.

82

Page IV-14

Toxic spills

If the South Fork Road is to remain open, then the only acceptable alternative is to not allow any transport of toxic materials.

83

Page IV-15

Chapter VI

Mr. Veto J. LaSalle, Supervisor
December 19, 1989
Page 8

84 The U.S. Forest Service identifies the potential for short-term cumulative impacts to the river. They fail, however, to recognize the potential for long-term cumulative impacts through the potential failure of slope stabilization projects.

85 Additional cumulative effects will occur through the failure to deal with other open road systems in the South Fork Salmon drainage.

Irreversible or Irretrievable

Commitment of resources

86 Valley County has expressed an interest in assuring control of the South Fork Salmon River if the Forest Service paves the roads. Should Valley County assume control, the Forest Service would no longer have control.

Sincerely,



Tracey Trent, Chief
Bureau of Program Coordination

TT:WR:tlv



STATE OF IDAHO

OFFICE OF THE ATTORNEY GENERAL

JIM JONES
ATTORNEY GENERAL

W. DALLAS BURKHALTER
DEPUTY ATTORNEY GENERAL

OUTFITTERS AND GUIDES LICENSING BOARD
1365 N. ORCHARD
ROOM 372
BOISE, IDAHO 83706
TELEPHONE (208) 376-5680

November 29, 1989

Mr. John Hooper
Project Leader
South Fork Salmon River
Road Project
Payette National Forest
106 West Park Street
P.O. Box 1026
McCall, ID 83638

Re: South Fork Salmon River Road Project,
Draft Environmental Impact Statement

Dear Mr. Hooper:

The Idaho Outfitters and Guides Licensing Board has requested me to comment on the Draft Environmental Impact Statement for the South Fork Salmon River Road project.

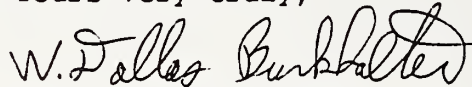
I would like to address two sections of the DEIS. First, the DEIS states under the heading of "Bear and Mountain Lion Hunting" on page I-6: "Dogs used to hunt bear and mountain lions in the project area disturb wintering big game. This disturbance could be reduced or eliminated through changes in hunting regulations. The Forest Service may request that the Idaho Department of Fish and Game analyze the impacts to determine if changes in hunting regulations are desirable." Second, on page II-5 the DEIS states in part: "If necessary, increased visitor use and the resulting impacts on fish and wildlife may be mitigated by restricting off-road use during critical times. The Forest Service may request that the Idaho Department of Fish and Game shorten hunting and fishing seasons or implement a permit season to control the number of hunters and fishermen."

Mr. John Hooper
November 29, 1989
Page two

87

With regard to both these sections, a proposed change in hunting regulations for bear and mountain lion hunting, or shortened hunting and fishing seasons would seriously impact licensed outfitters. The type of changes suggested by the DEIS would require amendment of the affected outfitter's license by the Idaho Outfitters & Guides Licensing Board. The Board requests that it be kept informed of any requests to alter hunting and fishing regulations or hunting and fishing seasons because any alteration may also require amendment of the Board's Rules and Regulations.

Yours very truly,



W. DALLAS BURKHALTER
Deputy Attorney General

WDB/dp

cc Don Anderson
Stacy Schlegal
Tracy Trent



IDAHO STATE HISTORICAL SOCIETY

CECIL D. ANDRUS, Governor

November 20, 1989

Dr. David L. Crowder
Director
210 Main St.
Boise, Idaho 83702
208-334-3890

Archaeology
210 Main St.
Boise, Idaho 83702
208-334-3847

Education
610 N. Julia Davis Dr.
Boise, Idaho 83702
208-334-2120

Genealogical Library
610 N. Julia Davis Dr.
Boise, Idaho 83702
208-334-2305

Historic Preservation
210 Main St.
Boise, Idaho 83702
208-334-3847, 3861

Library and Archives
610 N. Julia Davis Dr.
Boise, Idaho 83702
208-334-3356

Museum
610 N. Julia Davis Dr.
Boise, Idaho 83702
208-334-2120

Old Idaho Penitentiary
2445 Old Penitentiary Rd.
Boise, Idaho 83712
208-334-2844

Oral History
210 Main St.
Boise, Idaho 83702
208-334-3863

Publications
610 N. Julia Davis Dr.
Boise, Idaho 83702
208-334-3428

John Hooper
Project Leader
South Fork Salmon River Road Project
Payette National Forest
McCall, Idaho 83638

Dear Mr. Hooper:

We recently received the DEIS for the South Fork Salmon River Road Project. We are waiting to review the archaeological testing report based on the investigations conducted this summer by Anne Mesrobian and Tom Durelia. At that time we will be able to evaluate the necessity for further mitigation to the National Register eligible sites and approve the data recovery plan. Thank you for keeping our office informed on this important forest project.

Sincerely,

A handwritten signature in cursive script, reading "Thomas J. Green".

Thomas J. Green
Deputy SHPO
State Historic Preservation
Office



United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

Alaska
Idaho
Oregon
Washington



JAN 9 1990

REPLY TO
ATTN OF: WD-136

Veto J. LaSalle
Forest Supervisor
Payette National Forest
P.O. Box 1026
McCall, Idaho 83638

Dear Mr. LaSalle:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and § 309 of the Clean Air Act, we have reviewed the Draft Environmental Impact Statement (draft EIS) for the **South Fork Salmon River Road Project**. This draft EIS evaluates alternatives for long-term direction and winter access management for the South Fork Salmon River (SFSR) Road in Valley County, Idaho. The road extends 33 miles from the Warm Lake highway, descending about 1,500 feet to the East Fork of the SFSR.

Four alternatives were evaluated. They include Alternative A, No Action. (This means no change from existing Forest Plan direction which includes closing the upper 16 miles of road and converting it to a foot trail.) Alternatives B, C, and D are Asphalt Only, Gravel Only, and Asphalt and Gravel, respectively. These three "action" alternatives would allow motorized access on the SFSR Road. All three include 10.5 miles of road relocation or by-passes and an evaluation of three winter access options on the SFSR Road. Alternative B, Asphalt Only, is the preferred alternative.

We support the efforts of the U.S. Forest Service to reduce sediment on the SFSR. However, we do not believe that paving the SFSR Road is the best approach to achieving water quality and fish habitat objectives.

Based on our review, we have rated the draft EIS EO-2 (Environmental Objections - Insufficient Information). The SFSR is designated by the state of Idaho as a "water quality limited" stream segment for sediment under §§ 303 and 319 of the Clean Water Act. This means that Idaho Water Quality Standards cannot be met on the SFSR without additional nonpoint source water pollution controls. Any activities that would increase sediment would be unacceptable. We have environmental objections to Alternative B because sediment from construction and indirect development may impede recovery of water quality and fish habitat for summer chinook salmon. The draft EIS also identifies an increased risk of chemical spills to the SFSR from increased traffic.

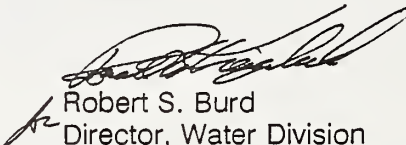
Additional alternatives need to be analyzed. Because protection and enhancement of fish habitat in the SFSR is such a high priority, all reasonable

alternatives must be evaluated. This includes total closure of the SFSR Road with additional winter access options to Yellow Pine such as the McCall-Yellow Pine Road and the Warm Lake-Landmark-Johnson Creek Road. This should include an evaluation of relocations or by-passes needed to address existing problem segments on these routes. Additional information also is needed on sediment and indirect effects.

More detailed comments are included in the attachment. Also enclosed is a summary of our rating system. A summary of our comments will be placed in the *Federal Register*.

Thank you for the opportunity to review this draft EIS. Because of the critical need for improving water quality in the SFSR, we recommend close coordination with the Idaho Department of Health and Welfare, Water Quality Bureau. Please contact Don Martin in Boise at (208) 334-9498 or Wayne Elson in Seattle at (206) 442-1463 if you have any questions about our comments.

Sincerely,


Robert S. Burd
Director, Water Division

Enclosures

cc: Dave Hofer, USFS, R-4
Joseph Negel, IDHW-DEQ
Goeff Harvey, IDHW-DEQ
Roy Heberger, F&WS, Boise

**U.S. ENVIRONMENTAL PROTECTION AGENCY DETAILED COMMENTS
SOUTH FORK SALMON RIVER ROAD
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

FISH HABITAT/WATER QUALITY

Three segments of the South Fork Salmon River (SFSR) in the project area are designated in Idaho's Water Quality Status Report and Nonpoint Source Assessment 1988 as being water quality limited due to sediment.

The Clean Water Act requires that water quality limited segments be identified by the State and are defined as follows:

1. "Each State shall identify those waters within its boundaries for which the effluent limitations required ... are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters." (§ 303(d)(1)(A)); and

2. "...identifies those navigable waters within the State which, without additional action to control nonpoint sources of pollution, cannot reasonable be expected to attain or maintain applicable water quality standards or the goals and requirements of this Act;" (§ 319(a)(1)(A)).

This designation requires the State to develop a Total Maximum Daily Load/Waste Load Allocation/Load Allocation (TMDL/WLA/LA). The U.S. Forest Service must assist the State in developing TMDL/WLA/LAs for the SFSR as well as implementing nonpoint source controls that prevent any additional sediment pollution. The water quality limited designation and TMDL process need to be discussed in context with this project.

On page IV-5 the text states that for all alternatives, "In the short-term, there is a high probability of a slight increase in sediment production from construction activities..." Because the SFSR is a water quality limited stream segment and the anadromous fish habitat resources on the SFSR are at a critical state, no further degradation is permitted. The text states on page III-5 that, "Further sediment reduction is needed in these spawning areas to improve fish habitat." The indirect effects of additional development on public and private land in the watershed may result in additional sources of sediment. This was not evaluated in the draft EIS. Page IV-14 states that, "Options for year-around access in Alternatives B, C, and D could also increase the risk of chemical spills from extended use of the road during the winter." Winter use and overall higher traffic volumes will subject the SFSR to additional water quality risks. Construction effects and indirect development may

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prolong the water quality/fish habitat recovery process and chemical spills may further damage the fishery resource.

SEDIMENT EFFECTS

92 The total percent reduction of sediment for each alternative in each portion of the road prism needs to be disclosed. In other words, the percent reduction from cut slopes, fill slopes, road ditches, road-induced drainages from culverts, and from the road surface needs to be described for each alternative. The draft EIS only reports sediment from the road surface. This is important for comparing the effectiveness of each alternative to reduce total sediment load. Studies on the Rainy Day Road and Horse Creek Road in the Nez Perce National Forest have shown that 15 to 20 percent of the sediment in the Batholith type soils originates from road surfaces and the remainder from cut and fill slopes. The applicability of these studies to the SFSR should be considered in evaluating sediment effects and the relative effectiveness of paving the road.

93 The text states on page IV-7 that, "Without implementing any of the alternatives, the cumulative effect would likely be an increase in sedimentation for the next three to five years as a result of the 1989 fire activity in the drainage." This is probably true. Was a quantitative analysis conducted to compare increases in sediment, water quality, and fish habitat from road construction, the forest fires of 1989, and naturally occurring sediment?

94 The draft EIS does not include a sediment model to illustrate sediment production among alternatives. The factors that are used to compare the alternatives are subjective and qualitative. A more quantitative model or approach needs to be used to compare the total sediment produced by all the alternatives.

95 Additional measures for comparing alternatives such as volume of material moved in re-construction would be helpful to the reader. The extent of cut and fill slope disturbance needs to be better explained. Does the erodibility by percent side slope, variations in weathering, etc. vary over the length of the road? Are there particularly critical problem areas which should be identified in the project? If so, they should be displayed.

INDIRECT EFFECTS

The Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act state that the environmental consequences section in an EIS should include: "Indirect effects and their significance (§ 1502.16(b))." Indirect effects are defined as: "...caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water

and other natural systems, including ecosystems (§ 1508.9(b))." The CEQ regulations also indicate that the draft EIS should include the "means to mitigate adverse environmental effects (§ 1502.16(h))."

The indirect effects of improvements to the SFSR Road need to be evaluated and disclosed. This evaluation should be done in the context of the cumulative effects with important issues of access, cost efficiency, fish habitat/water quality, and winter access and big game winter range. The following indirect effects need to be evaluated and mitigation measures described:

1. Additional development on private land in the SFSR drainage will be encouraged by paving the road. What is the potential for development of motorized recreation on private land? What are the effects? 96
2. What are the economic and social effects and long-term population projections for Yellow Pine with and without winter access? 97
3. Government investment and improved access through paving will increase pressure to harvest timber in the SFSR drainage. What are the effects of timber harvest on sediment recovery in the SFSR drainage? 98
4. Improved access will increase development of existing mining operations and future mining claims in the SFSR. What are the potential effects? 99
5. A paved SFSR road will shift May to November traffic volumes from the McCall-Yellow Pine Road and the Warm Lake-Landmark-Johnson Creek Road. How much increase will there be from existing traffic volumes on the SFSR Road mentioned on page III-2 ? Will increased traffic volumes and speeds decrease traffic safety? What are the environmental effects? 100
6. What are the current risk of chemical spills as compared with expected risks with each alternative? What are the potential effects for tanker truck volumes expected? (A discussion of past spills and effects would help reader to understand this issue.) 101
7. Does paving the road change institutional controls for road maintenance (will maintenance responsibilities be turned over to the county)? Has implementation monitoring elsewhere on the Payette National Forest demonstrated equal success in road maintenance regardless of institutional controls? 102

ALTERNATIVES ANALYSIS

The draft EIS appears to limit the range of "action" alternatives due to congressional direction. Only those "action" alternatives where winter access to

103 Yellow Pine on the SFSR Road is maintained are considered in the draft EIS. This seriously distorts the alternatives analysis. Page I-1 states that, "...Congress allocated \$8 million to the Forest Service to pave the South Fork Salmon River Road..." Page I-2 further states that the Forest Supervisor, "...will select an alternative for long-term direction for the South Fork Salmon River Road that best meets the intent of the congressional appropriation." While a legislative mandate is implied in the draft EIS, we can find none in the Department of Interior and Related Agencies Appropriations Bill, Fiscal Year 1989 (Public Law 100-446, September 27, 1988).

We believe that there are several "reasonable" alternatives and winter access options which were not been evaluated in the draft EIS. New alternatives that need to evaluated include:

1. An alternative which emphasizes sediment reduction such as total road closure from the Warm Lake Highway to the East Fork of the SFSR needs to be considered. The primary purpose of water quality management activities in the SFSR watershed is to reduce sediment production. The ability of this alternative in achieving water quality objectives should then be evaluated.

104 2. An alternative that includes paving the existing alignment also needs to be evaluated. Alternative B, Asphalt Only includes three relocations (by-passes). It assumes that these by-passes would produce less net sediment than asphaltting the existing SFSR Road alignment. This alternative was included in a value analysis completed in November 1989 by the Forest Service, Intermountain Region.

105 New winter access options that need to be evaluated include along the existing McCall-Yellow Pine Road and Warm Lake-Landmark-Johnson Creek Road. The draft EIS implies that if Alternatives B, C, or D were selected the Forest Plan would need to be amended. If the Forest Plan issues are revisited it would be appropriate to also evaluate alternative winter access options. Since travel on these routes might be more difficult in the winter, this analysis should include by-passes or reroutes to address water quality effects, road hazards and improvements in winter access. The final EIS on the Payette National Forest Plan did not evaluate winter access on the SFSR Road System. With regard to winter access on the SFSR Road the Forest Plan EIS concludes: "Year-around access to Yellow Pine, other private property, and mining interests could be provided on another route with less cost to the Forest Service and reduced risk to the resources (page D-11)." The full range of winter access options needs to be evaluated.

106 MONITORING

The monitoring plan needs to include a discussion of how the results of monitoring will be used to ensure that water quality objectives are achieved. If any of the "action" alternatives were implemented and sediment reduction and fish habitat

improvement objectives were not met in the SFSR, would permanent road closure or winter access options be re-evaluated? If mass-erosion and sedimentation occur, what efforts will be made to remove materials from tributary drainages or the main stem of the SFSR?

In-stream sediment needs to be included as part of fisheries monitoring. This is the best indicator of achieving the water quality standards and beneficial uses.

Turbidity is included as part of water and soil monitoring. Turbidity may not be very useful in detecting water quality changes for the SFSR except at the reconnaissance level during rising runoff events.

Monitoring needs to be included in the alternatives discussion. This would integrate the monitoring with the project. Any differences in monitoring among alternatives should be discussed.

COST EFFICIENCY

User costs are the second most significant cost after initial construction costs in the cost efficiency analysis (page IV-4, table IV-1). In Alternative A user costs exceed maintenance costs by a factor of 28, 14 in Alternative B, 28 in Alternative C, and 19 in Alternative D. When user costs are removed from table IV-1 the cost efficiency of the Alternatives are roughly the same.

ALTERNATIVE	TOTAL COST WITHOUT USER COSTS	TOTAL COSTS WITH USER COSTS (table IV-2)
A	3,905,000	5,119,000
B	6,767,000	7,880,000
C	6,815,000	9,282,000
D	6,684,000	8,206,000

Since user cost is a significant part of the cost efficiency analysis more explanation of its relevance or importance is needed. Was user costs an important issue in scoping? Will user cost influence choices for road users among alternative routes?

107

OTHER SPECIFIC COMMENTS

- Grazing of livestock is not mentioned on page III-10 in the "Riparian Resources" section. Is the SFSR excluded from grazing or does it influence riparian condition?
- What is the population of Yellow Pine? What is the economy based on?

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- 110 • How will funds for maintenance of the SFSR Road be guaranteed? Will maintenance budgets vary from year to year and therefore affect water quality?
- 111 • How does the planned SFSR Road relate to the total long-term transportation plan for the area? How do the McCall-Yellow Pine Road and the Warm Lake-Landmark-Johnson Creek Road relate to the SFSR Road as part of this plan?
- 112 • Good topographic maps showing the terrain with more detail are needed. It is not presently possible to determine whether the proposed "improved" alignments would be environmentally preferable. Are the new alignments going to be on midslope or ridge top locations? Will they have large fills, widths to accommodate the 105,000 pound gross vehicle weights (page II-4)? Will outslope or inslope, ditch and culverts be the drainage design?
- 113 • Where are the "difficult" road sections that will require special design and expensive engineering measures on each of the alignments? What are the risks to the fisheries resources posed by the various routes described especially at these difficult sections?

SUMMARY OF THE EPA RATING SYSTEM FOR DRAFT ENVIRONMENTAL IMPACT STATEMENTS: DEFINITIONS AND FOLLOW-UP ACTION *

Environmental Impact of the Action

LQ--Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA intends to work with the lead agency to reduce these impacts.

EQ--Environmental Objections

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category I--Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment

February, 1987



United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
1002 N.E. HOLLADAY STREET, SUITE 354
PORTLAND, OREGON 97232-4181



January 11, 1990

ER 89/979

Veto J. (Sonny) LaSalle
Forest Supervisor
Payette National Forest
P.O. Box 1026
McCall, Idaho 83638

Dear Mr. LaSalle:

The Department of the Interior has reviewed the Draft Environmental Impact Statement (Draft Statement) for the South Fork Salmon River Road Project, Payette National Forest, Valley County, Idaho. The following comments are provided for your use and consideration when preparing the final documents.

Fish and Wildlife Resources

Because fisheries management for salmon and steelhead in the South Fork Salmon River drainage (South Fork) has focused on land management over the past decade, the U.S. Fish and Wildlife Service (Service) is concerned about the declining recovery rate for sediments in the South Fork. Based on the importance of the anadromous fish resources, the Service believes that the alternative to be selected should provide the highest level of protection for spawning, incubation, and rearing habitats from additional sedimentation. Unfortunately, road closure was not evaluated in the Draft Statement. Without its evaluation, full disclosure of the effects from this potential alternative is not available to the public, and the decision maker also does not the benefit of such information and analyses. Because road closure may be the environmentally preferable alternative and the South Fork has a sedimentation history, the Service recommends that the Draft Statement should be amended to include road closure as a viable and feasible alternative.

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The recommended amendment also needs to address federally listed endangered and threatened species.

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The Service will provide comments, if any, pursuant to Section 404 of the Clean Water Act (Act) directly to the U.S. Army Corps of Engineers. However, the Service believes that any proposed project activities related to Section 404 of the Act should also be evaluated in the recommended amendment.

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Veto J. (Sonny) LaSalle

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Mineral Resources

The River provides major access to a significant mineral producing area in Idaho. Various mining companies have identified sufficient mineral resources to justify development. Consequently, the Bureau of Mines (Bureau) recommends the preferred Alternative B and Winter Option 3. This alternative offers the lowest costs and best access. However, the Bureau is concerned about the safety of the 14-foot (1-1/2 vehicle) width of the proposed road. Most large vehicles are 8-feet wide, and expansion of the road's width to 20-feet (2 vehicle width) would improve safety. The Bureau recommends that the Draft Statement be amended to include road expansion in the analysis.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in dark ink, appearing to read "Charles S. Polityka", with a stylized flourish at the end.

For Charles S. Polityka
Regional Environmental Officer

117

D. I. RISING

H. C. Box 2140
Cascade, ID 83611

11/19/85

John Hooper, Project Leader
S. Fk. Salmon River Project
P. O. Box 1026
McCall, Ida.

Dear Sir:

After reveiwing your alternatives for the S. Fk. road, we are of the opinion that none of them really make any sense, but if there is no other choice, then alternative B, with access option 3 is the only acceptable alternative.

It is our opinion that the best course would be to pave the road, right where it is, but you don't seem inclined to even consider this.

There is way too much emphasis on the fishery, and what the road does to it. The decline in the fisheries is not due to the road, but to the dams, down stream. There were lots of Salmon in the river, untill the dams were built, and the road was there. The decline in Salmon is also evidenced on Johnson Creek, and the So. Fk. road has nothing to do with this.

We, in Idaho, would benefit more if the money spent on Salmon was spent on trout. Very few Salmon are caught, in Idaho, anyway, and we have to put up with fishing closures in a lot of our prime recreation areas, to benefit the commercial fisheries, on the coast, and in the Columbia.

Too much of our State is closed to access, now, so option A would be completely un-acceptable.

Yours truly,

D. I. Rising

D. I. Rising

Resident of Idaho 76 years.

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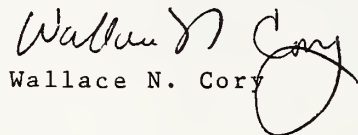
Wallace N. Cory
3815 Hampton Dr.
Anchorage, AK 99504
November 13, 1989

Mr. John Hooper, Project Leader
South Fork Road Reconstruction Project
Payette National Forest
P.O. Box 1026
McCall, ID 83638

Dear Mr. Hooper:

I appreciate the opportunity to review and comment on the final EIS for reconstruction and management of the South Fork Salmon River Road. I am a Yellow Pine resident temporarily residing in Alaska. I fully concur with the Forest Service preferred alternative. Alternative 'B' asphalt surface is the most favored alternative in my judgement as is winter access option 3. Please proceed with construction at the earliest possible date. Again, thank you for this opportunity. The Forest Service is to be congratulated for developing and supporting alternative 'B' and option 3. Also thanks for the 1989 South Fork fire map enclosure.

Yours very truly,


Wallace N. Cory

Nov. 20, 1989

John Hooper
Project Leader
South Fork Salmon River Road Project
Payette National Forest

Mr. Hooper:

Enclosed is a copy of the letter I am sending to the editor of the Idaho Statesman.

I have read the Draft EIS, and I think paving the road is the best alternative.

Although I make reference to the timber sales of past years, I am not against timber sales. With the modern ways of today, the mistakes of the 50s and 60s will not be repeated.

The wolf, if there have been no confirmed sightings, should not be any more of an issue than the grizzly bear. And for the deer and elk estimates, how many of these are actually ever seen from the existing road? Probably not any more than I can spot on a drive from Garden Valley to Lowman. I am not an expert, but I think big game can co-exist with man.

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A paved road with the proper maintenance will help solve the erosion problem. The people who live and work up there need this road, and they need year round access.

122

You are the expert, with the Forest Service, I hope you can prove it to the public and the environmentalists that a paved road can be an asset to all of us.

Thank you for your time, and good luck.



Patricia Shamblin
P.O. Box 43
Horseshoe Bend, ID 85629
795-2622

November 20, 1989

After reading the Draft Environmental Impact Statement for the South Fork of the Salmon River Road, I was surprised to see that there are four alternatives being carefully studied and considered for the road problem.

All four alternatives cover access, cost efficiency, fish habitat, water quality, big game winter range and winter access. I encourage everyone who has ever traveled the road, to obtain a copy from the Forest Service, as I did.

According to the article in the Nov. 9, 1989 issue of the Idaho Statesman, environmentalists accuse Senator McClure of forcing the paving decision on the Forest Service and securing 8 million for surfacing.

The passage of the 1989 Appropriations Bill (H.R.-4867), the United States Congress allocated 8 million to the Forest Service to pave the road, with the intent of reducing sediment produced from the road to the fullest extent possible, while maintaining motorized access.

Evidently Senator McClure did not get this 8 million single handed. The decision on the road is not final yet, and I'm sure if Mr. LaSalle, Forest Supervisor, was not qualified to make the right decision, he wouldn't hold the position of supervisor.

In every article I have ever read there is always a reference to the percentage of the chinook salmon the South Fork of the Salmon used to produce. Not often enough is there reference to the 8 dams that effect the river, the substantial timber sales of the 1950's and 1960's, the landslides of the 1960's, and now we have the fires of 1989.

The South fork of the Salmon River, lies within the Idaho Batholith. This is approximately 10 million acres of granite rock, characterized by steep slopes and highly erodible soil.

Sixteen miles of trail will not prevent more damage to the river. Paving the road with the Knox Ranch bypass, and the Penny Springs bypass is the best alternative for long range planning.

In my opinion, Mr. Medberry, Idaho Conservation League, owes "the people up there", an apology for his comment on their mentality. Mr. Medberry, have you read the Draft Environmental Impact Statement, or are you just a wolf in sheep's clothing looking for a spotted owl?

11/17

HELLO -

WINTER GANUE RANGE, THE MAJOR
PORTION OF REMAINING HABITAT FOR
WILD, INDIGENOUS SUMMER CHINOOK
SALMON, TRANSPORTATION OF TOXIC
MATERIALS, HUMAN DISTURBANCE TO
ITEMS ONE & TWO.

THAT WHY THE ROAD SHOULD BE
CLOSED. GOOD EFFORT PROPOSING TO DO
SO IN YOUR FOREST PLAN.

SALMON SHOULD BE CONSIDERED FIRST.
WITH THE ADVENT OF THE FURTHERANCE
OF THE ROAD. ALL OTHER ACTIVITIES
IN THE SOUTH FORK SHOULD BE DONE
VERY CAREFULLY.

VERY, VERY, CAREFULLY

Charles Mabbott

CHARLES MABBOTT

123

124

125

Chapter VI

United States
Department of
Agriculture

Forest
Service

Payette
National
Forest

P.O. Box 1026
McCall, ID 83638

Reply To: 1950

Date: November 8, 1989

Friends of the South Fork:

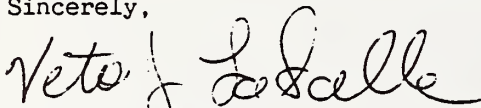
Enclosed is the Draft Environment Impact Statement for the South Fork of the Salmon River Road Reconstruction project that you requested

The Final EIS will determine reconstruction and management of the South Fork of the Salmon River Road.

Please review this document and send your comments to John Hooper, Project Leader by December 22. Your comments will be considered in the preparation of the Final Environmental Impact Statement.

For further information, please contact John at 634-8151

Sincerely,



VETO J. LaSALLE
Forest Supervisor

Enclosure

126

I am in favor of figure 11 Alternative B -
Knox Ranch Bypass & Perry Spring - Bypass
asphalt is preferred -
Plan I prefer The Forest Service
Preferred alternative in Summary page 5-8
of the draft Environmental Impact
Statement -

Reason - The Forest Service only grades gravel roads
once a year

Cliff Chambers
10237 PRAIRIE RD
BRI - 83763

November 21, 1989

John Hooper
Payette National Forest
PO Box 1026
McCall ID 83638

Dear John:

I am writing in regards to the Draft EIS for the South Fork of the Salmon River Road Reconstruction project.

Having spent a good deal of time along the South Fork, I urge the Forest Service to adopt Alternative A which was the original direction of the Forest Plan. This will best meet the goals of minimizing stream sediment in the most cost-efficient manner.

At a time of budget cuts, national deficit and all, 8 million dollars spent unnecessarily is ridiculous.

There are very few riverside trails in Idaho that would provide the quality of recreation that the 16 mile trail section proposed under Alternative A would.

Alternative A - the sensible choice.

Sincerely,



Betsy Bowen
1321 Indiana Ave
Coeur d'Alene, ID 83814

127



ROW RIVER ODYSSEYS WEST

November 21, 1989

John Hooper
Payette National Forest
PO Box 1026
McCall ID 83638

Dear Mr. Hooper:


I am writing in regards to the Draft EIS for the South Fork of the Salmon River Road Reconstruction project.

I urge the Forest Service to adopt Alternative A which was the original direction of the Forest Plan. This will best meet the goals of minimizing stream sediment in the most cost-efficient manner.

Another strong argument for this case is that there are very few riverside trails in Idaho that would provide the quality of recreation that the 16 mile trail section proposed under Alternative A would.

We don't need more motorized access. We don't need to further endanger the South Fork of the Salmon.

Best Regards,


Peter Grubb

RODMAN N. BARKER
P.O. BOX 129
COUNCIL IDAHO 83612

NOV. 28, 1989

Dear John:

Appreciate the opportunity to comment on the South Fork of the Salmon River Road Reconstruction project. I sincerely hope this project can be finalized soon. These political controversies are costing the tax payers many dollars which should be spent on the ground. You all have a thankless job.

I go along with the Forest Service recommended alternative.

Sincerely

A handwritten signature in black ink, appearing to read "Rodman N. Barker", written in a cursive style.

129

Weiser, Ida 83672
2260 Valley View Dr.

Dec. 8, 1989

Payette National Forest
Mojave, Ida

Dear Sir:-

I'm pleased to hear that you think
paving the South Fork Road is the
best choice.

I'm a part time resident of Yellow Pine
and this will give good access and
will also reduce the sediment into the
South Fork.

Sincerely,

Vern Harder

Bernice T. Harder

Yellow Pine Lodge
P. O. Box 77
Yellow Pine, Idaho 83677

Dec 8, 1989

Dear Sir

In response to the paving of the South Fork of the Salmon River. It would be a death trap at only 14 ft. wide. People will be driving faster and more wrecks will happen. It would be a waste of money.

They should put a good Rock and Gravel road and keep it maintained. When it freezes in the winter it will break up the pavement.

We are against paving the South Fork of the Salmon River Road.

Sincerely
Darlene Rosenbaum
Robert Rosenbaum

Chapter VI

1291 NW Jefferson St.
Roseburg, OR 97470
10 December 1989

USDA Forest Service
Payette National Forest
106 West Park St.
P.O. Box 1026
McCall, ID 83638

Ref: #1950 of 8 November 1989

To John Hooper
Project Leader
South Fork Salmon River Road Project

132

These comments on the referenced DEIS are presented by concerned long-time owners of property in Yellow Pine and continuing part time residents. Generally we are in agreement with the preferred Alternative B - Asphalt Only, with Winter Access Option 3. However, we wish to note some factors which were touched on lightly, or not at all in the DEIS.

For example, it was noted that we (Yellow Piners) consider the South Fork road the 'primary' winter access route. During a substantial portion of the winter it is the only access route - the Lick Creek road is too dangerous because of slide hazard to be used even if it could be kept open, and ice conditions combined with deep snow make the Warm Lake Summit route an impossible alternative.

133

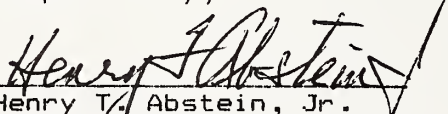
The conclusion that Alternative B is the most cost effective open access route and the most effective in reducing sedimentation is an encouraging finding. However, as one of the undersigned whose experience and memories of this area date from the early 1920's, I wish to protest the implication that the original destruction of spawning beds is primarily due to the road. It followed directly as a natural consequence of the clear-cutting that was permitted on the steep, decomposed granite hillsides of the river canyon. While it is true that subsequent run-off sediments maintained this unhappy condition, the original cause should not be lightly glossed over.


134

Lastly, we believe that the postulated adverse effects on wild game herds are more imagined than real. Witness the thriving herds in close proximity to the Yellowstone Park lanes which are heavily used by winter snow mobilers, Snow Cats, etc.

Thank you for the opportunity to comment.

Respectfully,


Henry T. Abstein, Jr.


Kathryn W. Abstein

Cascade Id
Dec 12, 1989

To whom it may concern

The South Fork Road should
be kept open 365 days a year
and be paved if there is Federal
funds available.

Earl Putman
Box 712
Cascade Id 83611

P.O. BOX 1587
KETCHUM, IDAHO 83340

December 12, 1989

Mr. Veto J. LaSalle
Forest Supervisor
Payette National Forest
P. O. Box 1026
McCall, ID 83638

Dear Mr. LaSalle:

Thank you for the Payette National Forest Draft
Environmental Impact Statement and for inviting me
to comment.

I feel that the Forest Service Preferred Alternative B
sounds acceptable. I only would like to recommend very
restricted speed limits, especially during critical
times of the year to protect the abundant wildlife of
the area.

Thank you.

Sincerely,

Hildegard Raeber

Hildegard Raeber

The Public's Involvement

309½ So. 8th St. Apt. 2
Laramie, Wyo. 82070

December 13, 1989

Veto J. LaSalle
Payette National Forest
P.O. Box 1026
McCall, ID 83638

RE. Project #1950 South Fork Salmon River Road

Dear Mr. LaSalle:

I'm impressed and agree with the project decision and commitment to Alternative B with Winter Access Option 3 of the EIS Draft this complies with H.R. 4867 (\$8 million for paving) and the U.S. District Court of Appeals order enjoining the Forest Service from prohibiting travel on subject road.

The following comments and questions are derived from personal experience, observations, and omissions within the EIS Draft.

1. Resident land owners of the affected area must always be the final decision makers. This includes area home owners, businesses, and Indian treaty rights. The Payette National Forest responsibility and decision making process has received a clear statement from the U.S. Congress and U.S. District Court about serving local people first. 137
2. Totally missing is information about clear access, unencumbered by private easements and encroachments to Indian Treaty Rights, Fee Land Ownership, and/or prescribed rights. I've spent over 30 years in Interstate Transportation (all phases and facets from labor to management), and believe me, only the lazy and dumb leave right-of-way details unsolved. To assume it is all public land would be a serious mistake. 138
3. With \$8 million earmarked for Alternative B and year-around open use requirements, where will continuous maintenance money come from? i.e., Federal, State, County, Land Owners, etc.? Will there be an annual maintenance contract awarded? 139
4. Commercial use statements are not realistic, i.e., land owners must be able to utilize any form of transportation appropriate to fulfilling their life style. The road construction must meet or exceed load requirements for logging, mining, ranching, etc. To limit commercial use includes government employees and contract personnel, doctors, commercial float and hunting guides, fire fighters, food and delivery service like U.S. Mail and U.P.S. 140
5. Specify that heavy duty road construction fabric matting is to be installed between the surface and base course for the full width and length of the 31.5 miles of paved road. 141

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6. How will the construction contract bids be solicited: Complete construction and material specifications, exhibits, lump sum with no extra provisions; or will a T & M Contract with change order provisions and cost overruns be utilized? Will inspection be experienced and control the work, or will inexperience and the contractor control the work? A copy of your contract package and bidder qualifications would be very interesting.

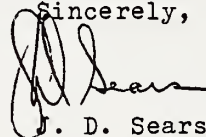
143

7. Over twenty years ago the RARE I advocates were reluctant to acknowledge the advantages of pavement to reduce sedimentation. The buzz words (riporian ecosystems), goals and objectives still compliment the approved action words and continue to fill pages of rhetoric that flow with no commitment to work ethics. I have written letters and spoke directly with Forest Service, Fish & Game Management about importing fry for salmon and steelhead transplanting with absolutely no interest from those who sensationalize about improvements that amount to worthless statistical fabrications. How much sedimentation is natural and what about seeding clouds, let it burn attitudes, etc?

It's been my experience when organizing and completing major projects that there is one sure way to failure "The No Action Alternative." Where would NASA be with such mentality?

Do nothing and no action groups are commonly denied real responsibility due to their lack of motivation, achievements, and leadership skills. They become so frustrated and non-productive that it is very risky to entrust these groups with any meaningful goals and objectives. The residents of Yellow Pine, the U.S. Congress, and District Court have provided still another opportunity for measuring success. Take this opportunity and expand the road paving advantages to include asphaltting all roads within the vast public lands of Idaho. If the Forest Plan is "No Action" oriented, then burn it not our forests. The time for achievers is here and being heard around the world.

Sincerely,



J. D. Sears

cc: Governors - Idaho, Washington, Wyoming
Fed. Rep's - " " "

The Public's Involvement

December 6, 1989
So. Fork Salmon River
Cascade, ID. 83611

USDA Forest Service
Payette National Forest
106 West Park Street
P. O. Box 1026
McCall, ID. 83638

In regards to your letter dated Nov. 8 1989 reply to 1950 addressed to "Friends of the South Fork". We are not only Friends of the South Fork but are also full time residence along it's banks. Therefore we feel obligated to comment on the letter for us and our friends here in Idaho and all over the United States who also are friends of The South Fork.

In the Draft Environmental Impact Statement for the South Fork of the Salmon River Road Reconstruction Project, Appendix A, District Report on Recreation. We object to the amendement part of the Payette National Forest Service Recommendations or the project leader Recommendation on the amendent.

In Chapter I of the Draft, under Purpose and Need the 1989 Appropriations Bill(HR4867) Allocated the money to the project area and the project areas discribed in this Chapter I of the draft. The recomenations under the amended part are outside of the Project Road Area and should not have been in this Draft or in the Final EIS. Under the South Fork Road Project, the amended recommendations would close to vehicle travel the three mile stretch of road from the Secesh River to Three Mile Creek, and retain it as a ATV route. Under Chapter VII of the Draft, there is no definition for ATV in the Glossary. Is an ATV an American Tourist Vixen or a 100 ton tank or something in between which could be more destructive to the river and it's Friends.

When this road was constructed it was one of the best three mile stretches along the South Fork River and still is. With minimal expenditures it could be maintained to the 4 or 5 level (road maintainance levels), with no harm done to the river. There is Parking and limited Camping oportuntates at the end of the road now. Therefor there is no need to develop them on the upper end of the road which would be on mining claims.

Since the road was built it has acted as a buffer zone between the terrain above it and the river. We have seen no documented evidence that the road itself has contributed any sediment to the river; on the contrary, we have visually observed sediment trapped on the road from the terrain above and was pervented from entering the river. Since the road was built it has provided acces for fire protection to the forest and private property along the river. This access has helped to suppress small fires on down river by the Payette National Forest that may have turned into major fires like the Circle End Creek fire in 1949 that destroyed the Fritser home and a large amount of the United States Forest and trees on other private property. Had this vehicle access by road been there at that time (1949) we feel this fire could have and probley would have been suppressed while small and prevented the huge amount of damage it did to the private property and watershed. In the South Fork Road Project Draft it says close road, retain as ATV route, it does not say maintain as ATV route. Does ATV route need any maintainance? Without maintainance it would mean more sediment problems to the river.

The Payette National Forest seems to have a policy if they have problems with any access road they either close it completely if they can, or water bar it which means BIG GULINS CUT into road bed to prevent any kind of maintaince on the road, which caused more problems to the enviroment. The project manager on the South Fork River project has implemented this policy in the past. If the supervisen of the Payette National Forest accepts these recommendations in the South Fork road project draft they will be implemented.

This three mile stretch of road since built, not only provided vehicle access for the Forest Service to carrey out it's duties, but also provided access for other Federal, State and County Agencys, also access to mining claims, private properties, their friends, guests, and Friends of the River. It is tne only reasonable access at certain times of the year that they have.

The project road intercepts the County road to Yellow Pine and the Lick Creek road just above the South Fork Bridge which is a Forest Service road to McCall. This road runs adjacent to the South Fork about 1 mile to the Secash River where the Three Mile Road connects to it then on to McCall. The Three Mile Road and Lick Creek Road's were built for access to the South Fork River and other land areas adjoining it. (Aterial Roads) The Forest Service has maintained these roads to provide these services. At this time the Forest Service and Valley County have a reciprecal agreement to maintain a portion of the Lick Creek road for vehicle access to the river and private property which is from it's junction with the County and Project road on down the South Fork on past the junction of Three Mile road up the Secesh River to Private Property. This maintainance seems to have no impact on the river. The South Fork River Below the mouth of the Secash has an incignificant number or spawning beds to be affected by futher maintaince of the Three Mile Road for vehicel travel as in the past. We would not object to ATV on the road as long as they do not interfere with normal vehicle travel and do no damage to the road or surrounding area.

We strenuously object to the closure of this road to vehicle access. We feel it could possibly be discriminating against us, the agencies and other peoples we have mintioned in this letter.

We feel vehicle access on this road is an asset to tue Payette Nationa Forest and all of the above mentioned, inculding the river itself. We also belive it should be maintained in the same manner as that portion of the Lick Creek Road that lies adjacent to the river and for the same reasons it is being done. If it is the Payette National Forest Supervisor's Final descion to adopt the amendment and implement the Recommendations in the Draft it will not solve the problems, but will create more problems to the river and the people inculding the Forest Service itself. If there is a problem with this road along this segment of the river and with people that use it for access, it should be solved in the same manner and for the same reason as the road in the South Fork Road Project. Maintain it as in the past or FIX IT not close the road.

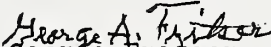
We have read people are to be treated equalley and if applied to the river we suggest to the Payette Forest Supervisor to join us as a Friend too the river and solve the problem equalley. If it is the Payette National Forest Supervisors final decision to close this road and has the authority to do so we feel his decision should be appealed through the courts and will be. Untill that time we would

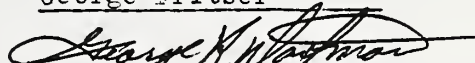
ask him to see that no moneys budgeted for other Projects in the Payette National Forest be used to close this road and for the enforcement of it's closure. We will ask the Congress of the United States to appropriate NO MONEY in any Payette National Forest Budget to close or retain this road. To do so would bring unjust hardship on us and all mentioned in this reply to the letter.

As Always
Friends of South Fork


Del Davis


Bonnie Davis


George Fritser


George R. Waitman

cc
James A. McClure USS
Steve Symms USS
Larry E. Craig USMC
Editor of The Star News



December 19, 1989

Mr. John Hooper
Project Leader
South Fork Salmon River Rd Project
Payette National Forest
P O Box 1026
McCall, ID 83638

Dear Mr. Hooper:

After reviewing the draft Environmental Impact Statement and studying the issues involving the road project, I feel the best alternative is B - winter access option 3 for the South Fork Salmon River Road Project.

Respectfully,

Ron Harrington
Ron Harrington, Chairman
Northwest Timber Workers
Resource Council
2230 N. Washington
Emmett, ID 83617

JOHN R. SWANSON
3400 Edmund Blvd.
Minneapolis, MN 55406

December 18, 1989.

Payette National Forest

P.O. Box 1026

McCall, Idaho 83638.

DEC 21 1989

Dear Sirs:

Please accept my concerns, as follows, concerning the
South Fork Salmon River Road Project Draft Environmental Impact Statement.
I wish to advise of my opposition to the South Fork Salmon River Road Project.
As I continue to question the need of any road along the South Fork Salmon River,
with ample evidence to suggest that any type of road along such river
will actually destroy the area's very impressive fish habitat and water quality
resources, resources of certain National significance,
and the impact of this project on this general area's wildlife resources,
including threatened and endangered species, would well be devastating.
With the destruction of the South Fork Salmon River's unique and varied
recreation and visual resources to be profound.

Since such road project is slated to obliterate the South Fork Salmon River,
an outstanding complex of nationally important wilderness, fish -
wildlife - Biological, cultural and scenic resources.

I, then, urge that the South Fork Salmon River Road Project be abandoned
and replaced by a wilderness - wild and scenic River dedication program.
Scafford the entire South Fork Salmon River area wilderness status,
and to grant the South Fork Salmon River status as a National Wild River.
So as best serve man, and all life.

For indeed we save our natural lands and waters;
we save America!

Sincerely,

John R. Swanson.

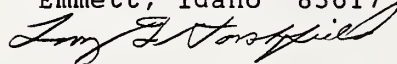
Chapter VI

December 19, 1989

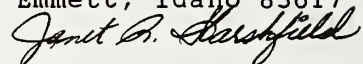
CERTIFIED MAIL RETURN RECEIPT REQUESTED

TO: JOHN HOOPER, Project Leader
P.O. Box 1026
McCall, Idaho 83638

FROM: LARRY T. HARSHFIELD
143 So. Commercial
Emmett, Idaho 83617



JANET R. HARSHFIELD
143 So. Commercial
Emmett, Idaho 83617



SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
South Fork Salmon River (SFSR) Road Project

Upgrading the SFSR Rd. would have many beneficial effects. Besides helping to ease sedimentation problems; the residents of Yellow Pine and the surrounding area would have increased mobility and freedom of travel during the wet and cold months of the year when the other routes are traditionally closed by the weather. The residents and land owners of Yellow Pine and the surrounding area have a right to year round **feasable** access to:

1. conduct daily business responsibilities,
2. get medical care, especially during medical emergencies and
3. help the economy in and around Yellow Pine prosper.

The Alternative B - Asphalt Only preferred by the Forest Service appears to allow the most freedom of access for people while protecting the fish and wildlife. Road widths narrower than 14 feet would increase the risk of accidents. An 18 or 20 foot width would accommodate travel with much greater safety.

Winter Access Option 3, allowing snow removal with permitted travel 7 days per week from January through March, as preferred by the Forest Service will be the most beneficial use of the road. We have observed many heavily traveled roads and highways that have winter big game herds concentrated along the right-of-way, with apparently little or no adverse impact. To close the road because of "animal stress" would be a poor use of the investment.

The Public's Involvement

Dear Mr. Hooper;

Please consider the following as comment on the S.F. Salmon river road project.

At the outset, let me say first that we have a unique opportunity with regards to this issue. Rarely, have I seen a chance for Americans to reverse or make right that which has been so damaging to such a thing as rare as Idaho's indigenous anadromous fish runs.

We have taken away so much of our resources in the past that this seems a perfect opportunity to give back just a little of what we have taken.

Having said that, it appears to me that Alternative A with winter access option 1 comes closest to accomplishing this end.

Even if the anadromous fishery were not **the** priority by which all mgt. decisions should be predicated upon, which I believe it should be, the other values such as wildlife, soil conservation, water quality and the future economic staple of the state, recreation, should be priority enough over all other considerations.

Common sense dictates that if we are to avoid toxic chemical spills in this in this drainage, closing the road eliminates this risk. For dealing with spills which will occur, will not only be a legal as well as managerial nightmare for the F.S., but could wipe out the native Steelhead if not continually delay their recovery.

Alternative A is also the least expensive and most cost effective proposal for managing this region. It is also more responsive to the budgetary deficits which all federal agencies have an obligation to address.

Alternative A does not deny access for Yellow Pine residents. If I were to buy a house on some remote parcel, should the government pay for the plowing and maintaining of my driveway just because I liked living there? Taxpayer do not have any obligation to subsidize access that is preferred but not is not needed. If we are suppose to manage the land for the greatest good for the greatest number over the longest period of time, adversely affecting a resource base as grand as the SFSR, clearly is not in the public's nor the land's best interest, especially for the sake of a small group's convenience.

Alternative A also preserves the most riparian habitat which in my opinion, is a highly underrated resource and is key to the survival of many plant and animal communities.

I have used the SFSR for spring and fall recreation for over ten years. But I would gladly give up easy access if it meant that the land would be the better for it.

Thank you for your time and consideration.

Sincerely,



Jim Johnston
Box 291
McCall, Id 83638

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THE WILDERNESS SOCIETY

IDAHO OFFICE

December 21, 1989

Mr. John Hooper
Payette National Forest
P.O. Box 1026
McCall, ID 83638

RE: South Fork Salmon River Road Project DEIS

Dear John,

Please include these comments in the public record for the South Fork Salmon River Road Project DEIS.

It appears that the ultimate goal of this project should be to achieve reduced sediment input from the South Fork Salmon River Road (SFSRR) while still providing access to the Thunder Mountain mining area. If so, then the range of alternatives displayed in the DEIS is inadequate. No alternative is displayed which would reduce sediment to the South Fork while closing the SFSRR and providing access to Thunder Mountain. Forest Service personnel have told me that if they had their choice of what to do with the eight million dollar appropriation from Congress, they would use the bulk of the funds to rehabilitate the old logging roads in the drainage while still closing the SFSRR. An alternative of this nature must be developed and displayed. As TWS and five other organizations urged in their scoping comments for this project, the document **Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations** states that under an EIS analysis, "alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies. Section 1500.1(a)." If greater sediment reductions can be achieved by other actions in the South Fork drainage, and if reasonable access options can be developed for the Thunder Mountain area, then those strategies must be displayed in alternatives considered in this EIS.

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413 WEST IDAHO STREET, SUITE 102, BOISE, IDAHO 83702
(208) 343-8153

VI-94

There is an alarming lack of quantification of impacts in the DEIS. No where are sediment volumes displayed. The public has learned nothing from the DEIS regarding total sediment input from the road construction activities, nor does the public know the current condition of the river in terms of fish habitat and how that condition will be affected by this project. The DEIS does state that there is a moderate risk of sedimentation from alternatives B, C, and D. Given the extremely depressed condition of the South Fork's anadromous fishery, even a moderate risk of sedimentation may be too much.

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The DEIS acknowledges the risk of sedimentation from the past year's fires, but again the volume is not quantified. The cumulative possible sediment impact from the road project and the fires is not displayed, thus making it impossible for the public to evaluate the risk the road project poses to the South Fork's fishery.

158

As with all the other projects proposed for the South Fork drainage, there is no documentation in the DEIS of cumulative sediment impacts to the South Fork, nor is there any documentation of how these new sediment sources relate to the Forest Service's sediment reduction efforts. The Payette Forest management plan outlined a schedule of rehabilitation efforts for the South Fork. The road project DEIS contains no status report of those efforts. Is the river in better or worse shape than it was when the forest plan was published? How successful have the sediment-reducing projects outlined in the forest plan been, and how do these new sources of sediment (the fires and the road project) figure into the rehabilitation efforts? What is the status of the interim objectives developed in the forest plan for the South Fork? The Payette Forest plan states that no sediment-reducing projects will be implemented in the South Fork prior to achievement of the interim objectives, and yet it seems that the road project will be implemented before these objectives are met, thus violating the Payette Forest plan.

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Given the risks of cumulative impacts from last summer's fires and the road project, the Forest Service should cease action on this project until the areas impacted by the fires have been rehabilitated and stabilized to the point where they no longer pose a threat of increased sedimentation to the South Fork. There is no margin of error allowed in a fishery whose population is as low as the South Fork's.

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In regards to winter access, the statement in the DEIS that there would be little difference in effects on threatened and endangered species with the SFSRR open between two and seven days is a dramatic reversal of the U.S. Fish and Wildlife's longstanding opinion on this issue. Yet the rationalization for this reversal is not presented. This new decision must be fully documented and displayed to the public for its evaluation.

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The DEIS also downplays the potential for the SFSRR to become

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a major fuel and chemical-hauling route to the Thunder Mountain area. The promises of strict hauling regulations will apply only to commercial vehicles. A better estimate and evaluation of the total amount of fuel and chemical hauling traffic on the SFSRR must be developed so that the public understands the magnitude of risk posed to the South Fork fishery by this traffic.

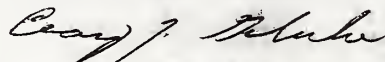
The DEIS does not acknowledge the real-world fact that a paved, improved SFSRR will become a major haul route of chemicals to the Thunder Mountain area. The risk to the South Fork's fishery from a chemical or fuel spill is largely ignored in the DEIS. It would only take one spill at a critical stage of the fishery's life cycle to wipe out this valuable resource. A worst-case scenario must be developed which fully explores the ramifications and consequences of the SFSRR becoming a haul route for chemicals and fuel.

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Through no fault of its own, the Forest Service has been bullied into a foolish project which only causes more overall environmental damage in the South Fork drainage. While there may be some long-term sediment reductions in the river, the impact of a paved road and traffic on wintering big game herds, the increased risk of fuel and chemical spills, the increased harassment to threatened and endangered species and the anadromous fishery all add up to a net negative impact to the South Fork drainage.

Yet the Forest Service is at fault for preparing an inadequate DEIS. These comments touch on only the major shortcomings of the DEIS. Much more work needs to be done on this document before the public can be expected to understand the real consequences of paving the SFSRR.

Sincerely,



Craig J. Gehrke
Regional Director

Emmett, Idaho
Dec. 2, 1989

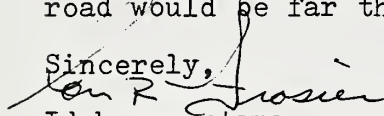
John Hooper
USDA Forest Service
Payette National Forest
McCall, Idaho 83638

Dear Sir:

Having studied the Draft EIS on the South Fork of the Salmon River road project, it is my opinion, with some deprecation, that Alternative B should be implemented as proposed.

As a long time user of the area, it is my belief that the existing road (when properly maintained) has not been the major contributor of river sedimentation, and that paving the road is an extremist, knee-jerk reaction to environmentalist pressure. Public access to the area by motorized vehicle should not be denied. Our real options have essentially been narrowed to an 8 million dollar expenditure of taxpayer money, or closure of the road. The Idaho outdoorsman loses a little either way, but to allow closure of this road would be far the worse.

Sincerely,


Idaho sportsman.

Jon R. Frasier
945 E. South Slope Rd
Emmett ID 83617

December 20, 1989

Mr. John Hooper
South Fork Road Project
P. O. Box 1026
McCall, Idaho 83638

Dear John;

It was nice meeting you at the meeting in Yellow Pine this fall and we thoroughly enjoyed the movie on the South Fork.

We would like to have our comments be considered in the preparation of the Final Environmental Impact Statement, regarding the South Fork road.

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We do agree with your feasible winter access under Alternative B for asphalt only. Winter access Option 3 - allow snow removal with permitted travel 7 days per week between January ~~thru~~ March.

On your three road relocations (by passes) whatever it takes to make it a feasible route by surfacing the entire length of the road with asphalt pavement.

167

We feel this route now and before is no way a hindrance to the Big Game.

So do continue to work for the peoples rights to their access on the South Fork of the Salmon river road.

Most Sincerely,

Lafe and Emma

Lafe and Emma Cox
910 South Boise Ave.
Emmett, Idaho 83617

The Public's Involvement

Harry E Wilson
2120 N Callow Ave
Bremerton, WA 98312-2908
19 December 1989

John Hooper
Project Team Leader
Payette National Forest
106 W Park St
P.O. Box 1026
Mc Call, ID 83638

Dear Sir

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the South Fork Salmon River Road Project Payette National Forest.

I agree that Alternative B (Asphalt Only) with winter option 2 vice option 3 should be the preferred alternative.

I believe that more information on the effect of the winter use of the road on the elk habitat and forage is needed. By reducing the big game winter range by 2/3's due to the road openings how bad will the deer and elk populations be effected?

How much winter recreation takes place in the area now and what is the expected the expected increase and how will it effect the deer and elk populations?

Sincerely



Harry E Wilson
2120 N Callow Ave
Bremerton, WA 98312-2908

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Coeur d'Alene Mines

CORPORATION

Rick Richins
Vice President-Environmental Services
and Governmental Relations

December 28, 1989

via telecopy

Mr. Veto J. Sonny LaSalle
Forest Supervisor
Payette National Forest
USDA-Forest Service
P.O. Box 1026
McCall, Idaho 83638

SUBJECT: Comments on SFSR Road Project

Dear Sonny:

I am writing to submit comments on the SFSR Road Draft EIS, on behalf of Coeur d'Alene Mines Corporation. Coeur d'Alene Mines Corporation currently operates the Coeur-Thunder Mountain Mine Project in Valley County, Idaho, through its wholly owned subsidiary, Coeur-Thunder Mountain, Inc. (CTM).

First, I apologize for the lateness of this response; however, I was stranded in the airport in Juneau for five (5) days last week due to weather conditions and the volcano eruption. I am sure you will provide CTM the same courtesy extended the ICL and Wilderness Society last fall in allowing additional time for those special interests to comment on the Lightning Peak DEIS. Also, the fact that CTM was not able to secure a full draft copy of SFSR Road DEIS from the USFS until mid-December (December 8), due to lack of available copies, affected our ability to respond in a timely manner. Therefore, the comments which follow are based primarily on our review of the Summary DEIS.

Our comments are as follows:

1. CTM has and continues to utilize the Johnson Creek/Landmark route for primary mining access, as identified in the Forest Plan.
2. CTM has and continues to require secondary mining access via the SFSR Road.
3. Based on the limited description of the road proposal provided in the Summary DEIS, CTM must assume that a 14-foot wide road surface is planned. This is not adequate width to accommodate secondary access mining use needs. Many sections of the road should be constructed to width of 20 feet. Likewise, the road should be designed to accommodate loads exceeding 100,000 pounds to allow mining traffic.

2417 Bank Drive, No. 302
Boise, Idaho 83705
(208) 385-0373
FAX (208) 342-4365

400 Coeur d'Alene Mines Building
505 Front Avenue/P.O. Box 1
Coeur d'Alene, Idaho 83814
(208) 887-3511
FAX (208) 667-2213

4. Hazardous materials and restrictions for transport of the same should be confined to those defined in the appropriate CFR (40 CFR 172) (i.e., cement, propane, and lime should not qualify for the same restrictions and requirements as cyanide). 172
5. Year-round secondary access should be provided for in the selected alternative. This will require special winter maintenance considerations, in order to provide travel 7 days per week January through March (Winter Access Option 3). 173
6. The DEIS should consider the potential of "directional" mining traffic being allowed to utilize the SFSR Road, when such traffic involves empty hauling (i.e., hauling in full via Johnson Creek/Landmark; out empty via SFSR Road). 174
7. The DEIS should address current "break up limits" which restrict mining access between Cascade and Warm Lake. Regardless of proposals for improving either the SFSR Road, Johnson Creek/Landmark or Lick Creek, mining access will continue to be unduly restricted due to the existing spring breakup limits. 175

Coeur d'Alene Mines Corporation supports construction of an improved access to our mining properties and the community of Yellow Pine. We are pleased to see the USFS working cooperatively with mining interests to ensure that adequate facilities are constructed. We also applaud the efforts of Idaho Senator Jim McClure and his support of the project. We hope the near future will present a similar opportunity with regard to improving the Johnson Creek/Landmark road through a smimilar program, as mining activity will continue to increase in the area in the future (reference Lightning Peak, Hecla, Pioneer, Freeport, others). 176

Hopfully, you will find these comments beneficial to the EIS review process. Coeur d'Alene Mines Corporation will continue to work constructively with the USFS and other involved agencies to ensure that the best possible transportation plan is implemented, one that provides reasonable access in a safe and environmentally sound manner. As you are aware, we have identified additional improvements needed on the Johnson Creek/Landmark route. Your staff's cooperation and timely review will allow the mining companies to implement the program, hopefully with future financial assistance from applicable state and federal funding sources.

Sincerely,



Robert T. "Rick" Richins

cc: D. Bork
L. Hartzog
A. Oberly
R. Mohr

Telephone Comments of Ray Rohrbacher, Emmett, Idaho

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Concerned with closing the three-mile section from Secesh to end of road. Takes family down there to camp and hunt. Opposes closing that section of road. Would like to leave it open. Feels it is best-maintained section of road for entire road system!

Notes taken by David Olson per phone call on 12/21/89.

Telephone Comments of Jim Smith

Don't close the three-mile section from circle end to Secesh Jct. Feels it provides good recreational access for future recreational demand for camping, gold panning, etc. Vehicles would not be setting out on main road. Good fire access for Tailholt, etc. It also jeopardizes future mining access and mining down river.

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Notes taken by David Olson

December 17, 1989

Veto J. LaSalle, Forest Supervisor
Payette National Forest
P.O. Box 1026
McCall, ID 83638

Re: South Fork Salmon Road River Project -
Draft Environmental Impact Statement

Dear Sonny:

Is the South Fork Salmon River Road Project (SFSRRP) a certainty, its Draft Environmental Impact Statement (DEIS) an academic exercise? I am led to this conclusion given the inadequacies of the documents provided for public review and comment.

In honesty, I am disappointed. I had hoped for better, thought the SFSRRP proposal and DEIS would provide specific data and evaluation as to the nature and intent of the project with meaningful assessment of impacts (both beneficial and adverse) the project would have upon the river system in its continuing struggle to recover and once again be the anadromous fish habitat it once was. Instead, I find a generalized laundry list of design criteria, impact assessment, and rhetoric that simply doesn't say much about the project or its impact upon the river system.

I was initially opposed to the SFSRRP. But, after going on the June 29, 1989 tour of the project and meeting with John Hooper and his crew, my position changed to acknowledge that although risks were involved the overall project, as was discussed on the tour, could result in hazard reduction (sedimentation) as well as remove certain fish passage barriers associated with the road and river corridor. I believed John and his crew were sincere in achieving these objectives and that the subsequent project proposal and environmental impact statement would so portray and evaluate/assess such a scenario. This didn't happen!

Although I'm still inclined to believe the SFSRRP in and of itself has merit, other events have occurred or are proposed that are conveniently glossed over or ignored in the DEIS; namely, the 1989 summer fire situation and proposed salvage logging. Potential erosion hazard and subsequent sediment production together with that risk as associated with road construction/reconstruction poses a significant threat that requires recognition and assessment. This, too, doesn't happen.

Finally, I find the text of Chapter III, Affected Environment, at page III-5 intriguing, it states, in part:

- "The South Fork Salmon River and its tributaries support the largest remaining population of Columbia River summer chinook salmon. The South Fork is one of only three rivers in the basin with remaining

Veto J. LaSalle
December 17, 1989
Page 2

runs of wild steelhead. These anadromous species are of national significance....."

- "Sediment has infiltrated or covered most of the gravels historically used for spawning. Mortality of fish embryos from the effects of scouring, depletion of oxygen, and trapping of fry in the substrate has resulted."
- "Rearing in the South Fork and mainstem tributaries are similarly degraded by sediment."(, and)
- "Core samples and embeddedness measurements show that there has been no improvement in the amount of fine sediment in the South Fork and its tributaries in recent years."

Having made these rather succinct statements in Chapter III, Affected Environment, the DEIS, Chapter IV, Consequences of the Alternatives, at pages IV-5 through IV-12 totally ignores providing any baseline data or assessment of impact(s) as regards sediment production associated with the SFSRRP, fire, or salvage logging activities. Instead, we have essentially meaningless rhetoric.

In conclusion, I return to my opening paragraph and question. Is the SFSRRP a certainty and the DEIS an academic exercise? I would also ask: Has the time and monies expended by the South Fork Road Project Team and Interdisciplinary Team been for naught? If so, let's be honest and say so. If not, let's go back to the drawing board and do the job right as I was led to believe would be done. Additionally, given the very real threat of toxic spills and other potential threats to the river system, I do request that a WORST CASE ANALYSIS be made in compliance with the National Environmental Policy Act.

Sincerely,

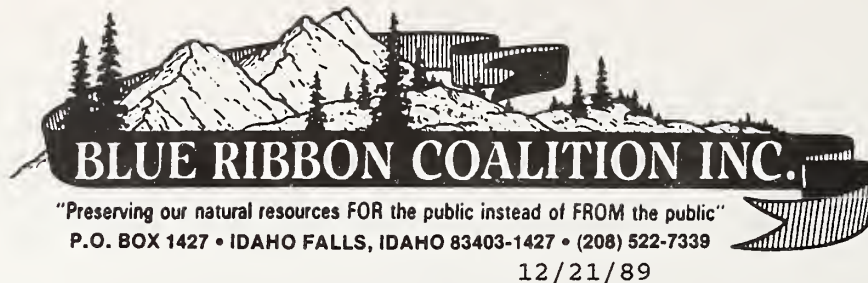


William R. Meiners

WRM:mjm

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Veto J. LaSalle, Supervisor
Payette National Forest
P.O. Box 1026
McCall, ID 83638

Dear Mr. LaSalle:

182

Thank you for the opportunity to comment on the South Fork Salmon River Road Project. We support your choice of Alternative B, Winter Access Option 3.

This choice will best serve the residents of Yellow Pine, property owners and miners, and recreationists. Asphalt paving will sufficiently protect the fish habitat.

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I agree that conflict with winter game is a concern. However, more heavily travelled highways have successfully co-existed with winter range. There is a large elk herd that winters next to Federal Hwy. 89 near Alpine, WY. Elk, deer, and bighorn sheep winter along Federal Hwy. 187 near Hoback Jct., WY. Yellowstone bison and elk have thrived beyond the carrying capacity of their range alongside hordes of snowmobile traffic. Winter does stress animals. You cite studies that show traffic increases that stress. Yet why has no one studied the lack of concern the animals show along the highways cited? No doubt because the conclusions would not support the philosophy.

I wish you success with the preferred alternative and look forward to the paving of the road.

Sincerely,

Adena Cook
Public Lands Director



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

975 S.E. Sandy Boulevard, Suite 202, Portland, Oregon 97214

Telephone (503) 238-0667

Fax (503) 235-4228

December 19, 1989

Mr. Veto J. LaSalle, Supervisor
Payette National Forest
P.O. Box 1026
McCall, ID 83638

Dear Mr. LaSalle,

Thank you for this opportunity to provide comments on the draft environmental impact statement (DEIS) for the proposed South Fork Salmon River (SFSR) paving project in the Payette National Forest (PNF) and the supplementary video tape.

The purpose of the EIS process is to disclose the impacts of a proposed action. Since the DEIS is not intended to be a programmatic document, it must disclose the site specific impacts of the proposed action. Unfortunately, the SFSR DEIS fails to do this. Instead, the document appears designed to persuade and comfort with vague reassuring statements instead of statements of fact. How much sediment will the various alternatives deliver into the SFSR? Over what time frame will this sediment delivery occur? How will the various steelhead and summer chinook spawning and rearing areas in the SFSR be affected by each alternative? These are critical issues and despite the fact that the Forest has clearly made quantitative estimates of these benefits, detriments, and impacts, none of this information is contained in the DEIS.

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The discussion of cumulative effects in the DEIS does little more than mention the possibility that erosion from the fires in the upper end of the drainage last summer could combine with erosion resulting from the paving project. What would the impacts on fish habitat be? The Forest notes that the cumulative effects would be dependent on the timing of the road construction (DEIS at IV-8), but fails to ever discuss how this timing issue should be dealt with. Given the sensitivity of summer chinook, any construction should be timed so that the least possible sediment is introduced at any given time.

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The DEIS is bereft of any justification as to why the road must be designed to accommodate large vehicles carrying chemicals that are toxic to fish. Instead, the DEIS merely mentions that the road is convenient for mine employees and that some mines would like it for secondary access. DEIS at IV-2. Mining claims need only be provided "reasonable access," which does not mean either year-round access or the route preferred by mining

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companies. Transportation of potentially toxic substances should be prohibited on the road. In addition, the status of the summer chinook population requires that transportation of chemicals hazardous to fish should not be permitted on the SFSR road. It is noteworthy that the Forest fails to discuss the disastrous impacts that are likely to occur if the road is opened to general use by those wishing to transport hazardous chemicals, including diesel and gasoline. The spill on Johnson Creek last summer and the extensive resulting fish-kill is ample evidence that accidents can and do occur. The summer chinook population in the SFSR might not withstand such an accident.

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The SFSR road should be re-designed so that it is no more than twelve feet wide. Given that this would decrease the road width by almost 14%, this width reduction should result in a reduction of sediment by about 14% from what will occur under the preferred option. Such a reduction in width is entirely feasible and would reduce the environment impacts considerably while also reducing road costs.

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The sediment delivery information is glaringly inadequate and totally misleading. The DEIS completely fails to quantitatively estimate what the likely sediment impacts to the stream will be although the PNF has access to regionally validated methods for estimating sediment yield that are based on local research. The DEIS also fails to quantitatively estimate what the sediment impacts to anadromous fish habitat will be. This is grossly negligent in light of the conditions on the SFSR. Anadromous fish populations in the SFSR have undergone great decline due to the degradation of fish habitat caused by sediment impacts from roads, timber harvest, and mining (Platts et al., 1989). The state of Idaho has declared the SFSR a water quality limited segment with respect to sediment. Plainly, the most deleterious consequences of the proposed road are increases in fine sediment in the SFSR. Yet the DEIS fails to disclose what the probable sediment impacts will be despite the resources at stake and the availability of estimation techniques. Instead, a cursory and qualitative discussion is substituted which includes misleading and inaccurate information. Obviously, this is unacceptable. The EIS must disclose what the likely impacts will be. To do this it must consider cogent factors.

Nowhere in the document is there a quantitative estimate of the erosion and sediment delivery from the road. The "Guide for Predicting Sediment Yields From Forested Watersheds" (Cline, et al., 1981) was developed from local research and can be used to estimate both erosion and sediment delivery. Why was it not used and the results included in the DEIS? This information should be included in the EIS. The sediment delivery estimates should be given for the construction period as well. The methods in Cline, et al., (1981) can also be used to estimate sediment delivery from debris flow. This information must be included in the DEIS.

What little sediment information is included in the DEIS is misleading and fails to include cogent factors. The only quantitative information on sediment in the DEIS is an index of erosion from cut slopes (DEIS at IV-11) and an estimate of

percent erosion reduction (DEIS at IV-12) for each alternative; this information is no substitute for estimates of sediment delivery. Indices are no surrogate for actual estimates. Further, fill slopes are typically a greater source of sediment from roads than are cut slopes (Megahan, 1974). In work on the Idaho batholith on the PNF, Megahan (1974) found that surface erosion on fill slopes was about 1.75 times that on cut slopes. Furthermore, mass wasting can be a dominant form of erosion on road fill slopes (Megahan, 1974) but this was not quantified in the DEIS. Thus, the indices of surface erosion by alternative are inadequate and misleading.

The index of erosion reduction (DEIS at IV-12) is also misleading because it completely fails to consider many factors which control sediment delivery from roads. First, it is based solely on erosion from road surfaces and ditchlines. The index (DEIS at IV.12) also fails to include erosion and sediment transport from cut and fill slopes. These components of erosion and sediment delivery must be estimated and conveyed in the EIS.

The DEIS does not include estimates of what erosion and sediment delivery will be during the construction period. It is likely that erosion and sediment delivery will increase substantially during the construction phase of the project. In their work on the Idaho batholith, Megahan, et al. (1986) found that road construction increased the sediment yield from a basin by about five times the natural rate. They concluded that much of the erosion from storms during construction depended more on the stage of construction rather than road design (Megahan, et al., 1986). In a six year study on the PNF, Megahan and Kidd (1972) found that erosion from areas disturbed by road construction averaged by 770 times more than that from an undisturbed area. In general, virtually every field investigation of road construction has shown that it substantially increases erosion and sediment delivery during the construction phase. Likewise, virtually every model for estimating erosion and sediment transport in forested areas predicts that there will be substantial increases in erosion and sediment delivery during the road construction. Much of this work was done in the PNF, and the ID team should have access to such information. It is obvious from locally applicable research that the preferred alternative (B) will result in much greater sediment delivery to the SFSR in the short term during the construction phase than the "No Action" alternative. Why then does the DEIS fail to disclose this information as required under NEPA? It is noted in the DEIS that road construction must not cause significant short term increases in sediment transport. DEIS at II-1. Therefore, quantitative estimates of annual sediment delivery by alternative for at least ten years must be disclosed in the final EIS. These estimates include sediment delivery during the construction phase of the alternatives.

Mass wasting and its attendant effects on sediment delivery were also not included. It was noted that there is a risk of mass failure in all alternatives. It is noted that this risk is highest for the preferred alternative. DEIS at IV-9. However, the DEIS fails to quantitatively estimate what expected sediment

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yields will be due to debris flow and mass failures. This failure to quantify mass failure derived sediment is grossly negligent because although mass failures may be isolated in both time and space, such failures dominate the entire, long-term sediment budget in mountainous watersheds (Benda and Dunne, 1987, p.213). Virtually all field studies of changes in sediment dynamics due to road-building indicate that the probability of mass wasting is increased by such activities (USEPA, 1980, p. V.1; Geppert et al., 1984, p. 88 and p. 119). It is very difficult to mitigate for mass failures. As stated by Geppert et al. (1984, p. 119), "The association of roads with debris avalanches is not specifically related to the construction phase or to road use, but rather to the fact that roads exist. Once constructed, both the soil and bedrock structure and the hydrologic properties in the vicinity of the roads are permanently altered. Unlike failures within harvest units the potential for debris avalanches from roads does not appear to decline with time except as the more susceptible areas fail." Given these factors we do not believe the cursory analysis was adequate. The DEIS fails to disclose the impacts from what is likely to be the single largest potential impact from the project.

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The DEIS also fails to quantitatively estimate how the sediment impacts will affect anadromous fish habitat and anadromous fish. There are methods available to make these estimates. These methods were developed by the USFS from research in the Idaho Batholith (Stowell, et al., (1983)). These methods should be coupled with sediment estimates to estimate the likely impacts to fish habitat and fish populations due to increases in sediment. These estimated impacts should be included in the DEIS and include information on impacts during the construction phase of the project.

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The DEIS also fails to mention that the state of Idaho has designated much of the SFSR within the project area as a water quality limited segment with respect to sediment. In so doing, the PNF has also failed to mention how it plans to meet state goals for reducing sediment input into the river. There is no mention of how the project will meet state water quality standards or even what those standards are. The DEIS also omits any discussion of how it will meet the state's Anti-degradation policy or the letter and intent of the Clean Water Act. These standards must be completely and clearly discussed in the EIS. The EIS must also demonstrate how the PNF will meet these standards in implementing any of the alternatives. This is not only necessary for disclosure, but it also provides a context for judging the adequacy of the water quality monitoring plan. As it stands, the monitoring plan in the DEIS is highly flawed, but it also lacks context.

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The monitoring plan lacks detail. An outline of a proposed monitoring plan is not adequate. It is also inadequate to simply promise that the parameters to be measured will be specified in a future contract. Without details including parameters to be measured, frequency, locations and methods of measurements, how can one comment on the adequacy of the monitoring plan? Without

these details, how is it possible to ensure that habitat and fish stocks are not harmed? It is essential that a detailed monitoring plan be part of any DEIS. These details need to be explicitly stated in the EIS.

Beyond the lack of the detail, the monitoring plan appears to be remiss in its monitoring of instream impacts. The PNF must provide adequate effectiveness monitoring that ensures that instream beneficial uses are not being impaired. This will require instream monitoring of cogent variables. Plot studies are fine if the PNF wishes to undertake them, but they provide no documentation that instream beneficial uses are not being impaired. At a minimum, the PNF needs to identify all state water quality standards and monitor these parameters in a manner that provides timely feedback into the management of upslope activities. The Forest Service's own guidelines direct it to use the information to modify and/or suspend activities so that beneficial uses are protected. This will require frequent sampling and timely data analysis. This needs to be documented in the EIS. The EIS also needs to discuss how the monitoring information will be used to refine the BMP implementation and activities upslope.

It is essential that the PNF adequately monitor sediment delivery. Turbidity samples are not an adequate measure of sediment delivery in batholith streams. Bedload transport comprises about 70% of the transported sediment in batholith streams (W.F. Megahan, Pers. Comm.) Further, it is believed that this bedload component most affects fish habitat. Therefore, bedload must be monitored at a frequency that allows quantification of the total load. This will require at least two samples per week (J. King, Pers. Comm.) The plan also fails to include monitoring of cobble embeddedness or percent fines in the stream substrate. These parameters are currently the limiting habitat factor in the SFSR and are the most likely to be impacted by sediment delivery. Until the monitoring plans include these parameters, they remain inadequate.

More than just channel cross sections must be measured. Sediment erosion, delivery, and sedimentation need to be measured. One of the most important impacts to anadromous fish and habitat is accelerated erosion and sediment delivery. The present channel geometry study as outlined is adequate only in estimating scour and fill at specific points. However, scour and fill are highly site-specific and will not necessarily give a good indication of changes in sediment yield due to various harvest activities. This point is well stated by Megahan (1985):

"The term erosion here implies a net loss of lithic materials from a given site. This is an important consideration because a net loss in one location often causes a net gain at another location. The term sedimentation refers to the movement of lithic material past or deposition at a given down drainage reference point. As I use the terms, sedimentation is not synonymous with erosion. Rather, sedimentation represents the net change in a number

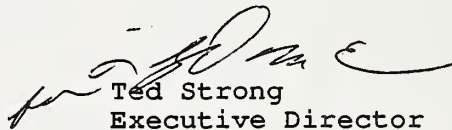
of sediment storage components within the basin. Thus, to properly monitor the effects of land use on sedimentation it is necessary to use a sediment budget approach. This involves consideration of three components: (1) erosion at point of disturbance; (2) changes in sediment storage between the point of disturbance and the downstream reference point; and (3) sedimentation at the downstream reference point. Failure to evaluate all three components in monitoring programs can lead to serious errors in evaluating the effects of land use."

Monitoring cross-sections for scour and fill in an attempt to examine headward channel extension is a reasonable method, although this technique would require numerous cross-sections to be done in estimating net change in sediment storage in tributaries. We recommend consideration of Megahan's tributary sediment storage technique for estimation of effects of land use in those stream channels in close proximity to specific land use activities. It is important to monitor on-site and tributary erosion processes as early warning indicators of future downstream environmental changes and also to follow trends in the downstream reaches themselves.

Finally, it is suggested that the EIS include, rely on, and discuss much of the cogent, past research and environmental analysis done locally on interactions between road construction, sediment delivery and impacts to fish habitat. The area has been studied extensively and few locations have a better historical data base. We believe that it is a sad comment on the DEIS that we have cited more work cogent to the SFSR here in our comments than are included in the entire DEIS. It is our hope that this situation is corrected.

Thank you for this opportunity to comment on the proposed SFSR DEIS. Please keep us informed of the progress of the environment analysis for the proposed development. We look forward to working together with the PNF on this and other projects. Please feel free to discuss the issues raised in these comments with Commission staff: Jon Rhodes (Hydrologist), and Jim Weber (Policy Assistant).

Sincerely,


Ted Strong
Executive Director

LITERATURE CITED

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LINDSAY, HART, NEIL & WEIGLER
LAWYERS

SUITE 1800
222 S.W. COLUMBIA STREET
PORTLAND, OREGON 97201-8818
(503) 226-1191

1225 19TH STREET, N.W.
SUITE 200
WASHINGTON, D.C. 20036
(202) 393-4480

SUITE 400
JEFFERSON PLACE
850 N. 9TH
BOISE, IDAHO 83702
TELEPHONE (208) 338-8844
TELECOPIER (208) 336-8893

1001 FOURTH AVENUE PLAZA
(SEAFIRST BLDG.), SUITE 3200
SEATTLE, WASHINGTON 98154
(206) 623-4711

345 CALIFORNIA STREET
SUITE 2200
SAN FRANCISCO, CALIFORNIA 94104
(415) 984-5856

W. HUGH O'RIORDAN

December 21, 1989

Veto J. LaSalle
Forest Supervisor
Payette National Forest
106 West Park Street
P.O. Box 1026
McCall, Idaho 83638

Re: Comments on the South Fork Salmon River Road Project Draft
Environmental Impact Statement

Dear Mr. LaSalle:

Evergreen Forest Products (Evergreen) submits the following comments to the South Fork Salmon River Road Project Draft Environmental Impact Statement (DEIS) in support of the preferred alternative.

As a preliminary matter, Evergreen is pleased with the U.S. Forest Service decision to build the road as indicated by the preferred alternative and as authorized by Congress. Construction of the road should have been the recommended alternative in the Payette National Forest Plan initially.

Year-round travel on the South Fork Salmon River road has been the subject of litigation which resulted in a Stipulation and Order agreed to by the Forest Service and the District Court of Idaho. A copy of this Order is attached to these comments to be incorporated into the official record. This litigation needs to be more fully discussed in the Final Environmental Impact Statement (FEIS). The proceedings leading up to the Stipulation and Order in this matter identified Federal District Judge Harold Ryan's concern for public access rights for the community of Yellow Pine. The DEIS does not adequately set forth the legal rights of Yellow Pine residents to access as contained in the Court Order.

The following discussion sets forth several other issues which should have been addressed in the DEIS. These issues must be incorporated into the Final EIS.

Omitted Issues

The DEIS makes no mention of the forest product industry's concerns and does not list them as an interested or affected party. This is a significant omission, given the fact that the road has a 20-year life span and timber harvest activities are scheduled for the second decade in this area. Additionally, Evergreen participated in the "IDT" meetings facilitated by Dave Olson, who was apparently retained by the Forest Service

The DEIS acknowledges the 20-year life span of the proposed road. Subsequently, it must consider all potential impacts or benefits attributed to this road over the 20-year period. A significant issue is helicopter and other types of logging to occur in this area in the second decade. At that time, the South Fork Salmon Road will provide an important access and log hauling road. Furthermore, the historic importance of this road for logging access needs to be acknowledged.

These actions must be considered in the scope of the EIS as mandated under the Council on Environmental Quality regulations at 36 CFR § 1508.25. Moreover, this omission is inappropriate in light of Evergreen's participation in IDT meetings for the DEIS, in which issues regarding future timber harvest activities pursuant to the Forest Plan were discussed. Road maintenance and forest use including timber harvest activities were discussed at each of these meetings and should also be discussed in the Final EIS. In fact, the mediation group agreed to include timber activities as an issue to be discussed in the EIS. See IDT meeting notes for June 12 & 13, 1989. Copies of the IDT team minutes for May 1 & 2, May 25, June 12 & 13, and July 10 & 11, 1989 are attached for incorporation into the record.

The preferred alternative's proposed paving and year-round access will alleviate future timber related environmental issues. The proposed alternative provides the best environmentally feasible option for access to remove logs in an environmentally sound manner and should resolve many of the concerns of the public regarding timber harvest activities in the South Fork. These added benefits need to be discussed in the EIS.

Reasons to Maintain Access Over Road

Evergreen supports the preferred alternative for other reasons as well. Most importantly is the maintenance of access for the public. The preferred alternative fulfills this important benefit to the majority of interested parties. Furthermore, appropriate mitigation will be applied to reduce any impacts induced by year-round access.

As stated in the DEIS, the preferred alternative best provides desired recreational opportunities for the public while meeting the needs of the citizens of

LINDSAY, HART, NEIL & WEIGLER

Evergreen Comments - Page 3

Yellow Pine for winter access to their community. Additionally, the preferred alternative fulfills the terms of the Stipulation and Order in Mountain States Legal Foundation v. Lyng. Access is insured while at the same time sedimentation is reduced. Fisheries are preserved. Thereby providing a perfect compromise between all concerned.

Although road access may pose potential conflicts with big game winter range, suitable mitigation has been committed to reduce this impact. *See* DEIS at II-5. Evergreen's view is that the DEIS greatly exaggerates these potential conflicts. Little scientific basis exists to support this analysis. Generally speaking, the wildlife portions of the DEIS are scattered and are difficult to follow; the impression is left that separate authors were involved in the preparation of different portions. Evergreen's view is that road access will provide little or no conflict with big game and other wildlife.

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Actually the preferred alternative will greatly benefit wildlife. Reduction in sedimentation to the river is best provided by paving the road, thereby addressing the concerns of sportsmen and native Americans concerned about fish habitat.

Additional Comments

Evergreen would like to emphasize the commitment by the Forest Service to the design standards described in the Appendix C of the DEIS. Given the potential future need by the forest products industry for access over this road, design and construction should include this criteria during the initial road design to preclude future additional costs. The Federal Roads and Trails Act (16 U.S.C. § 535) and Forest Service regulations (36 C.F.R. § 212.6) clearly provide that roads be constructed to design standards so as to meet future planning needs. Therefore, the road should be designed for a 105,000 lb. load.

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The road management plan criteria contained in Appendix E of the DEIS need to be discussed. First, the section on commercial vehicle permits states "[p]ermits should be very restricted and the exception not the rule." DEIS at Appendix E. Evergreen understands the importance of managing for commercial vehicle use. However, the Forest Service in developing these guidelines, must consider future forest plan management activities. Therefore, the commercial permits should not be so restrictive as to preclude the use by logging trucks for future timber harvest in the area. We offer the same comment in regards to size limits set for this road.

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Evergreen Comments - Page 4

Comments on the DEIS Analysis

1. Sedimentation model:

Discussions of fish habitat/water quality are interspersed throughout the DEIS. Sediment reduction appears to be the primary consideration in the forest planning process. Yet little factual information is presented. The DEIS contains mostly conclusions regarding the deleterious effects and presence of sediment.

The graphs presented at III-6 and III-7 imply a degree of scientific confidence which does not exist. The erosion and sediment transport discussion presented at III-9 to III-10 is not supported by citations to scientific studies or data. Generalized statements such as "the amount of sediment delivered to the South Fork Salmon River exceeds the river's ability to carry it out of the system", is overly broad and not supported by any references to citations which can be verified. See DEIS at III-10.

The "relative rating" which compares "the relative amounts of sediment that could potentially reach the South Fork" is a meaningless figure which vastly overstates the risk of sediment delivery. See DEIS at IV-11. The use of the index of erosion exaggerates sedimentation concerns and is simplistic. See DEIS at IV-12. The entire discussion of erosion and sedimentation presents an excessive view of the actual problem and is not based on scientific fact, but instead based upon unstated assumptions and advocacy. The Final EIS should present a more balanced and accurate analysis.

2. Gray Wolf:

Considering there are no gray wolves in the area, the discussion of the Northern Rocky Mountain gray wolf's status as an endangered species is overdone. Again, vague wording is substituted for scientific data leaving the impression that the proposed project might affect the wolf. The key words at I-6 are "the projected presence of four to six wolves in the area." The scientific basis for this projection is not given nor are the assumptions disclosed. This type of projection is speculative and again overstates the issue. The final EIS needs to clearly present scientific evidence and not advocacy.

3. Forest Plan:

The DEIS notes that it is tiered to the Forest Plan, and the actions being proposed are within the scope of the Payette National Forest Plan. Evergreen agrees with this analysis. Additionally, Evergreen strongly approves the description of the No Action Alternative at II-6 as being "no change from current management direction,

LINDSAY, HART, NEIL & WEIGLER

Evergreen Comments - Page 5

which is the Forest Plan." This is the correct statement of law and in accordance with Forest Service Washington Office direction.

The view that implementation of the plan is the no action alternative should be followed in other planning documents. Alternatives not implementing the plan should be so described. The no action alternative is to implement the plan.

Conclusion

Evergreen agrees with the preferred alternative. The quality of the DEIS overall is good. The tiering is properly done and the document is understandable. However, the FEIS needs to discuss potential harvesting concerns in order to comply with planning direction. Analysis of wildlife, sedimentation and the gray wolf are overstated and not supported by scientific data. These sections seem advocacy orientated.

Evergreen understands the concerns of Forest Service biologists, but believes that the line between science and advocacy is being crossed. The Final EIS needs to refer to peer-reviewed scientific documents which support the specific assertions made in the DEIS. Generally speaking many of the scientific assertions need to be more carefully written.

Evergreen appreciates the opportunity to comment on the DEIS. If you have any questions please contact Cliff Lee or my office.

Very truly yours,


W. Hugh O'Riordan

November 15, 1989

TO: John Hooper
Project Leader
South Fork Salmon River Road Project
USDA Forest Service
Payette National Forest

SUBJECT: South Fork Salmon River Road Project

We, the undersigned residents of the Village of Yellow Pine and the State of Idaho, petition the Payette National Forest and the USDA Forest Service with the following concerns about the Draft Environmental Impact Statement for the South Fork Salmon River Road Project:

1. We feel that it is imperative that year round access to the Village of Yellow Pine be maintained for the safety and well being of the residents of Yellow Pine. Winter closure of the South Fork Salmon River Road for any reason is a violation of our rights as residents of the Village of Yellow Pine and the State of Idaho.
2. We feel that a road width of 14 feet endangers lives and is an unacceptable compromise to the safety of those using the South Fork Salmon River Road. We believe that a minimum road width of 16 feet should be adopted and that this road width would not significantly increase sediment deposition in the South Fork Salmon River.

202

203

John Hooper
Fora Chase
Bruce Pattinson
Bob Kingle
Kella W. L.
Mary T. Valdez
Dan H. Hunt
Bill Jones
Alan Elm
Ray W. Helmstrom
Paul Tessier
Joseph W. Price
Dana L. Lorne

Jani Spangler
Elaine R. Lorne
Charles L. Nease
Boat L. Lorne
Frank Blum
William L. Lorne
David L. Lorne
John L. Lorne
P. Miller
John Allen
Alvin E. Helmstrom
Betty L. Lorne
Kinda J. Lorne



Hecla Mining Company

December 29, 1989

Mr. John Hooper
Project Leader
South Fork Salmon River Road Project
Payette National Forest
106 West Park Street
P. O. Box 1026
McCall, ID 83638

Hecla Mining Company supports the Payette National Forest's efforts to reduce environmental impacts caused by the South Fork of the Salmon River Road. Road improvements will minimize impacts while maintaining access. The Forest Service should be commended for their efforts to protect valuable resources in the South Fork Basin.

The South Fork Salmon River Road Draft Environmental Impact Statement document was well prepared and written. Several problems exists with the final decisions the Forest Service is proposing for present and future road management.

Following are the Yellow Pine Mine staff's comments on the South Fork Salmon River Road Draft Environmental Impact Statement. The comments are ranked in order of what we feel most relevant.

1. Chapter 1, page 1, paragraph 5. The statement "Leaving the road open in the winter does not conform with Forest Plan and requires additional analysis" leaves the Forest Service with an escape. The current plans for winter maintenance were brought about only through court action (U.S. District Court of Appeals) lasting through the final construction of the road. A permanent winter maintenance solution must be implemented to insure continuous access for property owners and National forest users. The Forest Plan must be amended and this statement deleted to ensure year around access for all parties.
2. Throughout the document, references are made to vehicle designs, road widths and road realignment. Viable concerns with potential sedimentation problems and physical terrain constraints are well documented. Road vehicle designs included satisfactory weight requirements.

Yellow Pine Mine • Box 75 • Yellow Pine, Idaho 83677

Many locations throughout the road system, both realignments and present locations could easily be converted to a 16 foot road width without creating new sediment source areas. This would greatly increase passenger safety and road usability. The primary goal of this project is to decrease sediment entering the system. With proper planning, specifically adequate designs for sedimentation control, the project would meet all goals and road use potential. Risks for short term impacts are increased. But, the increases in long term benefits through increasing the road width will substantially cut the chance of serious accidents involving tourist, mining/Forest Service/Idaho Department of Fish and Game personnel and Yellow Pine residents.

3. Chapter three, page 2, paragraph 3 includes a section on road management which states "Commercial haulers are required to have a permit. Commercial and non-commercial hauling of fuels is permitted on the South Fork Salmon River Road. Commercial hauling of toxic material is restricted by Payette and Boise National Forests to reduce the risks of accidental spills". This was amended in a letter dated September 27, 1989 from Herb L Cummings, Cascade Ranger District to John Haan, Hecla Mining Company. This section should either be updated to include new restrictions or allowances reestablished for fuel hauling.

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4. Mining related "material" hauled on the South Fork Salmon River Road is stringently controlled. Public and Forest Service personnel transport potential toxic or hazardous material almost daily. The mining industry does haul large quantities of certain hazardous material into the Stibnite area, but other interests using the road should be controlled through the same process.

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It is our intent to help bring about a rapid conclusion to this process which satisfactorily meets project goals and public, private and agency concerns.

Thank you for your time.

Sincerely,

Darin Worden

Darin Worden
Environmental Coordinator

Forest Supervisor
Payette National Forest
McCall, ID 83638

1/e/po

To Whom it May Concern;

This letter is being sent for inclusion in the public comments on the Draft Environmental Impact Statement for the Payette NF. Specifically, the Friends of Idaho: Midwest (FIM) would like to comment on the draft EIS recommendation for paving the South Fork Salmon River Road. The Friends of Idaho: Midwest is a non-profit group of U.S. citizens concerned with the management of the national public lands of Idaho. We appreciate this opportunity to comment on this important issue.

208 Although we are aware of several other management problems in the Payette National Forest, FIM is especially concerned with the proposed paving of the South Fork Salmon River Road. It is truly unfortunate that the draft EIS recommends an alternative which would essentially maximize the potential effects from spills of toxic substances, increased vehicular traffic and recreational use while concomitantly failing to protect the wildlife resources of the area. Specifically, we are gravely concerned with the failure of the NF to protect critical habitat for elk, deer and gray wolf. In an era of increasing anthropogenic pressures on natural ecosystems and their biotic components worldwide, the failure to adequately protect existing resources will have ever-increasing costs. Furthermore, the introduction of increasing amounts of xenobiotic substances into the South Fork Salmon River environment from the additional traffic on a paved road may have significant consequences for biota.

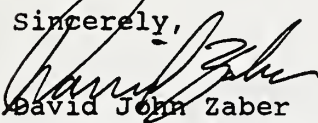
Unfortunately, it is almost impossible to predict interactions between toxicants or between toxicants and such naturally present environmental stressors as disease and weather or anthropogenic habitat destruction. Even identifying the nature of such interactions ex post facto is unusual, although their existence can be postulated from available data.¹ Moreover, within natural communities and ecosystems, both interactions between species and interactions between species and the physical environment can be subtle and difficult to detect. This interrelationship among components of ecological systems creates situations whereby seemingly minor effects cascading

¹ Francis, B.M. and D.J. Zaber, Developmental and reproductive toxicology of xenobiotics, E. Hodgeson, ed., Reviews in Environmental Toxicology, Vol. 4, 1989, 167-240.

through the system may become of the utmost importance.²
Subsequently, adequate assurance of no adverse environmental effects of paving this road cannot be given.

Along with the aforementioned problem, FIM feels that paving the S.F.S.R. Road would be a monumental waste of taxpayer's money, equaled by few such boondoggles nationwide. This money would be better spent on improvements to wildlife habitat in the Payette NF. Based upon these issues, FIM must express its concern over the paving of the S.F.S.R. Road and request that financial support for this project be denied. If you have any questions on our comments or positions in this matter, please contact us at 517-851-7476.

Sincerely,



David John Zaber
Director - Friends of Idaho: Midwest
13040 Tophith Rd.
Grass Lake, MI 49240

209

² Levin, S., K.D. Kimball, W.H. McDowell, and S.F. Kimball, New perspectives in ecotoxicology, Environ. Mgmt., 8, 1984, p. 375.



INLAND EMPIRE PUBLIC LANDS COUNCIL

P.O. Box 120 Coeur d'Alene, ID 83814 · P.O. Box 2174 Spokane, WA 99210

Sonny LaSalle, Forest Supervisor
USDA Forest Service
P.O. Box 1026
McCall, ID 83638

Jan 14, 1990

RE: DEIS: South Fork Salmon River Road Project

Dear Supervisor LaSalle,

Please find enclosed the March, 1989, issue of TRANSITIONS which, in part, addresses the issue of paving the SFSR Road.

As the USDA Forest Service (USFS) is aware, the salmon and steelhead runs of the South Fork Salmon River (SFSR) are seriously compromised by past decisions, including the USFS decisions to log the SFSR watershed. The decision to pave the SFSR road is at best a "second-best" choice; at worst, prelude to another disaster on the SFSR.

210

The best choice is the USFS's original choice in the agency's Record of Decision (ROD) in the Final Forest Plan, Alternative A. The agency should have selected Alternative A.

211

Page I-2 The present decision to pave the SFSR road is financially and environmentally inappropriate. A decision to pave the road does not tie back to the ROD of the agency's Forest Plan for the Payette National Forest.

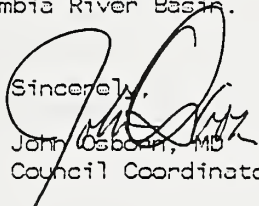
Page III-3. "This groups places a strong emphasis on the amenity values associated with the forest and its resources. They want the assurance that certain resources and conditions will continue to be available as part of their chosen lifestyles." This statement is inaccurate and misleading. USFS staff in McCall would clearly benefit from reviewing: George Davis: Wilderness: Legacy or Playground. American Forests April, 1990. This can be obtained from Gerry House, IPNF, 1201 Ironwood Dr., CDA, ID 83814 [ask for planning document 142]. Although this article pertains to wilderness, many of the same arguments pertain to the wild runs of salmon on the SFSR. The reasons for efforts to protect and restore the SFSR and its fishery are multifactorial. [See also IV-2]

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Page IV-14 Toxic Spills. The USFS should describe substances likely to be transported along the SFSR road, and biologic and economic impact on the fishery if and when spills occur. Spills have already occurred in the watershed of the SFSR, and the USFS should reveal these (and their impacts) to the public. The cost of spills should be displayed to the public.

Again, I wish to thank you for this opportunity to comment on a matter of tremendous importance to the Northwest: the future of the fishery of the Columbia River Basin.

Sincerely,



John Osborn, MD
Council Coordinator

January 15, 1990

Mr. Veto J. LaSalle, Supervisor
Mr. John Hooper, Project Leader
Payette National Forest
P.O. Box 1026
McCall, ID 83638

Re: South Fork Salmon River Road Project DEIS

Dear Mr. LaSalle & Mr. Hooper:

We appreciate the Forest Service's extension for filing comments on this important project. From our review, the DEIS is insufficient for a number of legal and analytical reasons. We request that this project be re-evaluated completely on sound NEPA grounds, that the DEIS be re-done, and that the Payette National Forest Final Land Management Plan be revised because of violations of CEQ regulations in this draft EIS. Please evaluate the following points:

The DEIS employs an inappropriate factor in preferring Alternative B on economic grounds. In its life-cycle cost analysis, the Payette employs a "user cost" figure. We do not believe that including such a figure is appropriate. The DEIS does not provide a justification for using this in evaluating the relative economic efficiency of the alternatives. The user cost of Alternative B is \$1,113,000 over the life of the road. The user cost of Alternative D is \$1,522,000. Because of this \$409,000 difference, Alternative B appears to be more cost-efficient.

But if the user cost element is removed, Alternative D is more economical. Alternative B would cost \$3,467,000 if the user cost is removed, but Alternative D would cost only \$3,384,000. Hence, the statement that you are trying to reduce sediment "by using the most cost-efficient method" (DEIS at I-1) is certainly questionable and not justified by our analysis.

The DEIS provides an inadequate evaluation of cumulative impacts. While some attention is given to fishery cumulative impacts in the DEIS, the study fails to analyze the effects of forest fire sediment contributions in the South Fork drainage. The Boise National Forest (the lead agency on fires on

1989?) assumes that all fire is 'natural' here so that any sediment increase from the burned areas is normal "background" sediment. From this position, it appears that the Payette National Forest assumes that any management techniques in the drainage, such as paving this road and harvesting trees, will constitute a beneficial sediment reduction. This analysis is faulty in that it does not examine the current condition of the watershed due to fire activity and fails to employ fairly predictable runoff scenarios from the burned areas. Cumulative impacts of year-round road usage also are given short shrift in the DEIS.

215

On pages IV-1-2 of the DEIS, the Yellow Pine area users's concerns for year-round road usage are discussed. However, the **DEIS does not provide any history documenting the fact that these users only began to have year-round access about five years ago** due to Fish and Game Department plowing schedules for other purposes. (Nor does it mention that Fish and Game has since determined that wintertime plowing is no longer necessary for their Six Bit Creek stocking operations.) A factual discussion of historic access privileges for an extremely small group of people versus wintertime and "wet season" (spring, fall) road-caused resource damage to anadromous habitat, elk herds, other wintering species (grey wolf, bald eagles, mule deer, mountain lion) is needed in this DEIS. **The DEIS fails to establish a need to keep the SFSR road open year round.** Your apparent excuse that the Payette Forest has lost two district court cases on this issue are not sufficient grounds for establishing year round road use. For example, there is legitimate question as to whether the presentation of those cases was handled well and the failure of the Forest to pursue appeal to a higher level also is not discussed. In short, the DEIS must pursue this seasonal usage question much more systematically before satisfactory NEPA compliance can be assured on your winter road management decision.

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One very foreseeable impact is inadequately analyzed in the DEIS and this issue is **commercial hauling increases and the likelihood of toxic spills into the South Fork Salmon.** Both the Boise and Payette National Forests have put anadromous and native fishery resources at great risk by the failure to enact a comprehensive mine transportation plan for this area. Although Senator McClure may believe that this new, paved road's highest purpose is for recreation and access to Yellow Pine, as a paved road, this will be an irresistible route for mine traffic to the Stibnite and Thunder Mountain areas.

The DEIS states that miners "regard the South Fork Salmon River Road as a

winter access road (DEIS at IV-2)". The Forest apparently believes the SF road will remain only a secondary route (with Johnson Creek as the preferred route in good weather) for mining traffic. We believe this assumption is erroneous. **All of the alternatives which allow the South Fork road to remain open should contain (1) truck weight limit restrictions and (2) a ban on commercial hauling.** Since the mines do not operate in the winter (or at only at a very low level), such a ban should not impact this group adversely. Mining companies should plan to haul adequate supplies to their operations in the autumn over the Johnson Creek route, which also needs critical safety repairs to protect its valuable fishery resources. Then, winter traffic in diesel and other hazardous substances will not be necessary. Should wintertime spills occur on the South Fork River route, low water levels and the difficulties of mounting response and cleanup during cold weather would foreseeably result in a major disaster for anadromous fry and redd survival.

217 We believe it is foreseeable that certain citizens and politicians next will request paving the Lick Creek Road as part of a backcountry tourist loop. This connection to the South Fork Salmon Road, particularly the impacts of increased commercial and private usage, speed problems and regulation, and associated costs should be analyzed in this DEIS. To ignore this likely scenario is not acceptable, as the South Fork Road issue must be viewed within the context of the whole drainage and likely future transportation system.

218 **The DEIS needs to take a more in-depth look of the paving and construction cut and fill impacts on the anadromous and native fishery resource.** Operating in such narrow confines in many parts of this canyon will risk creating more sediment problems even if the utmost contractor precautions are taken.

219 **The DEIS constitutes an improper exercise of the "tiering" technique under the CEQ regulations.** The Payette Land and Resource Management Plan and Environmental Impact Statement ("Forest Plan") proposed adopting the course of action which appears in the DEIS as Alternative A -- close a portion of the South Fork road and pave none of it. Because the preferred alternative in the DEIS is inconsistent with the Forest Plan, the tiering technique cannot be applied in this case. The Forest's evaluation of the new plan for the South Fork road should include a revision of the Forest Plan.

Finally, current DEIS omissions point to the need for a drainage-wide EIS on all forest activities in the South Fork Salmon and East-Fork South Fork Salmon Rivers. Mining claims and proposals for dredge and placer operations, hauling issues, timber harvest plans, the road paving and reconstruction, gold mine expansions in adjacent areas, and the restoration of salmon and steelhead resources are complicated questions impacting this fragile ecosystem. The Forest's final plan and this current DEIS overlook too many subjects that are inter-related. The time obviously has come for the Payette National Forest to sit down with all agencies, experts and the public to squarely face the future and all interconnected activities affecting the South Fork.

Sincerely yours,

Jeff Fereday & Kay Hummel

Jeff Fereday & Kay Hummel
420 E. Crestline Drive
Boise, Idaho 83702

Boise/Payette Backcountry Coalition

Box 1794, McCall, ID 83638 634-4353

1824 Edgcliff Terrace, Boise, ID 83702 345-8706

January 15, 1990

USFA Forest Service
PNF
106 West Park St
PO Box 1026
McCall, Idaho 83638

Attn: John Hooper

Dear Sir:

We have reviewed the SFSR Road Project FEIS and would like to present some of our comments:

(1) We wish to continue to point out the violence done to the public input process by the SFSR Road Project. A Final Forest Plan with a consensus-developed management for the SFSR was reversed simply by Senator McClure's pork-barrel money for a road. This disruption of the public process might call into question the current request for public input -- will this public input be utilized -- and then trashed? The SFSR Road Project cannot be seen as a project consistent with the PNF Final Plan: it should be seen for what it is -- a change in management direction and therefore requiring amendment.

(2) We believe that if \$8 million is to be spent on the South Fork, it should be spent in the fashion that would be best for the anadromous fisheries. The whole point of reducing sediment is to improve the fisheries -- but just doing that will not ensure that the Chinook will rebound. Logically, the FEIS should consider alternatives not simply of different road types and placements, but of better ways to restore the fish. In other words -- how would a fisheries biologist spend the money -- not just a road engineer?

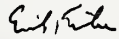
(3) We are not persuaded of the rationale for year-round use of a SFSR road. For example, comparison costs of snow removal on Johnson Ck vs the SFSR were not found in the FEIS; the right of access is not specific to one particular route. Also, the year-round use costs of the SFSR road should include hidden costs of such use on the salmon resource.

(4) Truck use of the SFSR carrying toxics and other chemicals needs to be prevented or more tightly-regulated in the basic proposal for this road: the impact of a spill is not low nor unlikely over time.

(5) We think that there should be more clarification of cumulative sediment impacts on the SFSR, like that of the 1989 fires.

(6) We wish to ensure that all road to trail conversions are indeed non-motorized as proposed in the FEIS so as to maximize protection of the waters and to provide for quality recreation.

Sincerely yours,



Erik Fisher

Chairman, BPBC

Forest Response to Comments on the Draft Environmental Impact Statement

The preceding section reproduces the comments received on the DEIS. Each comment or group of related comments was assigned a number (see pages VI-7-8) corresponding to the number of the Forest response in this section. Many comments dealt with the same or similar issues, concerns or opportunities. To minimize duplication, many of the following responses refer the reader to a previous response, to various sections of the FEIS, or to supporting documents.

COMMENT RESPONSE

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1 Idaho's proposed revision of Alternative D (combination of gravel and asphalt surfacing) in the Draft Environmental Impact Statement (DEIS). The interdisciplinary team (IDT) concluded the construction cost savings of the state's proposal compared to all asphalt would be minimal and would be offset by increased maintenance and user costs. In addition, it was determined that gravel surfacing of the proposed road section would have little effect on recreational use or experience since it would be relocated away from the river. After additional mitigating measures were developed to address other state concerns, the environmental effects of the state's proposed alternative and the preferred alternative (RA) were so similar the state's proposal was not included in this Final Environmental Impact Statement (FEIS) as a separate alternative.

2 The preferred alternative (RA) severely restricts the use of the South Fork Salmon River (SFSR) Road for commercial and noncommercial transport of toxic materials, including bulk fuel. Exceptions to allow supply of the Reed Ranch and Krassel Guard Station, and to allow for emergency situations, will be strictly regulated through a formal management plan. See Appendix E.

3 The preferred alternative (RA) limits the use of the SFSR Road for commercial hauling, i.e., any vehicle in a size class greater than 1 1/2 ton that is for hire. Limited commercial use will be regulated through a formal management plan. See Appendix E.

The preferred alternative (RA) designates the Warm Lake-Johnson Creek Road as the primary access route to Yellow Pine, private land, and mining operations. SFSR Road design width of 14 feet with turnouts, and a standard state highway legal load limit will restrict the length and weight of vehicles that may use the road.

4 A 14-foot roadway (12-foot travelway with 1-foot shoulders) was determined to be the widest continuous width possible without having to make many major cuts and fills that would greatly increase the hazard of erosion and sedimentation of the SFSR and tributaries. The preferred alternative (RA) restricts road width to 14 feet except at turnouts in order to minimize cuts and fills. The design requires only one major cut and fill.

5 Maintenance of the SFSR Road is a Forest Service responsibility. For the present the Forest Service will maintain the road. Maintenance can be contracted to the county. In that event, county maintenance would be in accordance with Forest Service guidelines in a maintenance plan to be developed after the road is designed.

The Forest Service does not intend to plow snow from the SFSR Road. A court order restricts the Forest Service from preventing snow plowing by others pending the decisions to be made in this FEIS. The preferred alternative (RA) contains mitigating measures that will be incorporated into a maintenance plan that will regulate snow plowing by others to minimize sediment production, protect structures such as curbs, retaining walls and bridge abutments, and to provide road crossings and other mitigating measures to protect wildlife.

6 The SFSR Road is not expected to become the primary access route for the mines or community of Yellow Pine when the Johnson Creek Road is open. The SFSR Road will be longer, slower, more restricted in width, have lower weight limits, and will have more use restrictions than the Johnson Creek Road.

7 Sediment reduction is the priority objective of SFSR Road design criteria in the preferred alternative.

8 Based upon model projections, the preferred alternative (RA) reduces sedimentation of the SFSR as much or more than any alternative considered, including the Forest Plan direction (Alternative A in the DEIS, Alternative NAFP in this FEIS). The preferred alternative, including mitigating measures to prevent/minimize sediment production during construction, maintenance and snowplowing, is designed to reduce sediment to the fullest extent practicable in compliance with nonpoint source requirements of the Clean Water Act.

9 The discussion on recreation was expanded in Chapters III and IV. The Forest Plan provides for monitoring the impacts of all uses within the project area. If this monitoring finds that foot traffic, use at river access points, or other activities are creating excessive erosion or other hazards, prevention and/or mitigating measures will be implemented.

10 Loss of some of the natural character is an unavoidable trade-off to meet sediment reduction goals. User groups are also concerned about the recovery of anadromous fish. The preferred alternative (RA) is not designed to encourage increased use of the SFSR Road. It is principally designed to reduce sediment in the SFSR and tributaries. The road will have a one-lane, 12-foot wide travelway with 1-foot wide shoulders and turnouts to accommodate two-way traffic. It is expected that the Johnson Creek Road will continue to be the preferred access to the Yellow Pine and Stibnite. Nonetheless, the presence of a paved road will unavoidably diminish to some extent the traditional primitive recreational experience. The novelty of paved access is expected to increase recreation use of the area in the short-term. Within a few years, however, recreation use trends are expected to realign with overall trends for the Forest.

11 The IDT considered gravel surfacing for the bypass road. It was determined that asphalt was preferred to reduce maintenance cost and to avoid the safety risk inherent in alternating gravel/asphalt road segments.

12 Based upon model projections, the preferred alternative (RA) is as or more effective at reducing sediment than any alternative considered, including the state's proposed modification of DEIS Alternative B. The Forest Service cannot redirect resources Congress has dedicated to paving the SFSR Road. The Boise National Forest Plan directs that the road south of Warm Lake Highway be analyzed for possible closure.

13 Improvements to other road systems are outside the scope of this FEIS. The Forest Plans provide direction for other road systems.

14 The scope of the project area analyzed in this FEIS necessarily was defined to comply with the congressional appropriation to pave the road.

15 The reconstructed SFSR Road will have a one-lane, 12-foot wide travel-way with 1-foot shoulders except where constricted by natural features. Turnouts will be provided to allow two-way traffic. This design is considered the minimum practical width to safely accommodate the anticipated traffic. Widening is not necessary to construct a 14-foot road, with the exception of several short segments. Only one major new cut and fill is required - to make the transition from the Knox Road realignment to the existing alignment.

16 See comment 6.

17 Recreation use of the area will be monitored. The Forest Service will respond to identified needs within budget constraints and Forest priorities under guidelines established in the Forest Plans.

18 Closing Pioneer Road from Knox Ranch bypass along Cabin Creek to the SFSR Road was analyzed by the IDT. It was determined that the open road would have little adverse environmental impact and would provide access to a popular camping and recreation area. Previous attempts to block access to this road have resulted in people pioneering new access routes and causing environmental damage. See Appendix A.

19 The road will be signed to inform travelers of driving conditions, speed limits, and appropriate driving behavior. Enforcement will be accomplished through a cooperative agreement with the Valley County Sheriff.

20 The use of the SFSR Road by commercial traffic will be limited and regulated. See response to Comment 3. The Johnson Creek road will be the primary access route for large vehicles accessing Yellow Pine and mining operations.

21 A court order directs the Forest Service not to deny winter access via the SFSR Road pending the decision in this FEIS. The Forest Service will not plow snow from the road. Others who wish to plow the road are required to follow Forest Service guidelines established as part of the preferred alternative (RA). See response to Comment 5.

22 The preferred alternative (RA) limits commercial use of the SFSR road. See response to Comment 3 and Appendix E.

23 A discussion on rafting and kayaking was added to Chapters III and IV. Paving the SFSR road is not expected to increase river use by kayakers and rafters. See response to Comment 17.

24 Road user cost, i.e., the cost of operating a vehicle including fuel consumption, wear and tear on vehicles, etc., is important to those that will use a road on a regular basis. Road design characteristics such as uphill and downhill grades, road width and type of surfacing influence user cost. Road user cost is a standard consideration in road design. Road user cost was analyzed to determine the optimal life cycle cost for the road. Road user cost was a consideration, but did not have a major influence on the choice of the preferred alternative (RA). In this FEIS, construction and maintenance costs - which did play a significant role in choosing the preferred alternative - are displayed with and without road user cost.

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- 25 See response to Comment 17 and Appendix A for an overview of the recreation management direction for the area.
- 26 See response to Comment 17.
- 27 See response to Comment 24.
- 28 State-of-the-art technology will be used to stabilize cut and fill slopes, including retaining structures, reinforced earth, and vegetation. These techniques are discussed in Chapter IV and Appendix B.
- 29 Sediment prevention/mitigation measures will be incorporated into the construction contract. These will include restricting the construction season, requiring construction by segment to reduce the amount of area exposed at any one time, use of measures such as silt fences, filter windrows and straw bales, and temporary retaining structures. In addition, sediment will be directly removed from the SFSR and tributaries in amounts equal to or greater than the amount projected to be contributed by construction activities.
- 30 The preferred alternative (RA) provides snow removal specifications which prohibit excessive piling of snow on cut and fill slopes.
- 31 This has been done. See Appendix D Monitoring Plan.
- 32 The primary objectives of this analysis of the SFSR Road are to reduce sediment to the fullest extent practicable, comply with congressional direction to pave the road, and comply with court direction regarding winter access. Although natural erosion contributes the majority of the sediment to the river, natural erosion cannot be reduced. The South Fork Road is the largest human-caused source that can be treated and could potentially reduce enough sediment to move stored sediment out of the system. Based upon model projections, the preferred alternative (RA) reduces sediment as much or more than any alternative considered, including the Forest Plan direction (Alternative A in the DEIS, Alternative NAFP in this FEIS). It complies with congressional and court direction and includes appropriate mitigating measures.
- 33 The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials on the SFSR Road with limited exceptions under special permit. See response to Comment 2 and Appendix E.
- 34 The preferred alternative is designed to reduce the risk of toxic spills as compared to current conditions. This is accomplished by limiting commercial traffic and by prohibiting transport of toxics except under special permit. These limitations are more restrictive than those presently in effect.
- 35 See response to Comment 34.
- 36 The "other projects" projected during the next five years within the SFSR drainage are analyzed in the Forest Plan and the Boise National Forest Warm Lake Fire Complex Fire Recovery Project EIS. The cumulative effects of these projects and of the various alternatives considered in this FEIS were analyzed as part of the decision-making process that resulted in the preferred alternative (RA).
- 37 The preferred alternative (RA) requires only one major new cut and fill.

The Public's Involvement

The IDT, Forest Service contracting officer's representative and his or her inspectors will monitor all aspects of construction to ensure compliance with construction and sediment prevention/mitigation measures. See response to Comment 29 and Appendix D.

38 The discussion of recreational impacts has been expanded in this FEIS over what was in the DEIS; see Chapters III and IV and response to Comment 9. Visitor information is not intended as in-kind replacement, but environmental awareness is an important, positive approach to help reduce disturbance.

39 Commercial and noncommercial transport of toxic materials are strictly regulated in the preferred alternative (RA). See response to Comment 2 and Appendix E.

40 In the Fiscal Year 1989 appropriations bill (H.R.4867), Congress directed the SFSR Road be paved. Alternatives to paving are discussed in the Payette Forest Plan, the Environmental Assessment on Interim Management of Winter Access in the South Fork Salmon River Drainage, the South Fork Salmon River Road Project DEIS, and this FEIS.

41 Under the preferred alternative (RA), Johnson Creek Road will continue to be the primary access route to Yellow Pine and mining operations. However, congress directed that the SFSR Road be paved. The Forest Service cannot redirect funds appropriated for that purpose.

42 Road design will limit the size of vehicles using the SFSR Road. Vehicle weight will be limited to standard state highway legal loads. Management restrictions will also eliminate some vehicle types. See response to Comment 3 and Appendix E.

43 Funding for future normal maintenance is subject to the normal Forest Service budget process. Any commercial use is subject to a user fee to cover maintenance. These fees are collected when such use occurs.

44 Access needs of mining operations are discussed in the EA on Interim Management of Winter Access in the South Fork Salmon River Drainage. Due to narrow road width, weight restrictions and limitations on commercial hauling on the SFSR Road, it is expected that Johnson Creek Road will continue to be the primary access route for mining operations.

45 Annual maintenance plans are highly dependent upon annual events and subject to frequent change. Appendix G contains the criteria that will guide development of annual maintenance plans.

46 Maintenance costs in the DEIS were obtained from the Valley County Engineer. Construction costs are rough estimates which are adequate for the purpose of comparing the relative cost of various alternatives. These costs will be refined in final design of the road reconstruction project. Final cost may differ significantly from the rough cost estimates used to compare alternatives.

47 The preferred alternative (RA) strictly limits commercial and noncommercial transport of toxic materials on the SFSR Road. Exceptions will be regulated by permits. See response to Comment 2 and Appendix E.

48 Under the preferred alternative (RA) the Forest Service maintains jurisdiction of the SFSR Road. If maintenance is preformed by the county, it will be done in ac-

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cordance with Forest Service guidelines. If the county or other entities choose to plow snow from the road, it will be done in conformance with Forest Service guidelines. See response to Comment 5, Road Management and Maintenance Requirements in Chapter II, and Appendix G.

49 This FEIS deals only with the SFSR Road. With that exception, and the need for one new major cut and fill, the preferred alternative (RA) meets these recommendations.

50 This analysis is confined to the SFSR Road, but does address the cumulative impact of other roads and sediment sources in the drainage that are discussed in the Forest Plans, the Boise National Forest Warm Lake Fire Complex Fire Recovery EIS, and other environmental documents. See response to Comments 13 and 14.

51 The preferred alternative (RA) provides for a 14-foot roadway, managed as a single-track road, with turnouts and use restrictions, and additional constraints. Paving will unavoidably diminish to some extent the semi-primitive attributes of the area. See response to Comment 10.

52 Commercial traffic on the SFSR Road will be regulated by road design and specific regulations. See response to Comment 3. Johnson Creek Road will continue to be the preferred route for extremely heavy loads, e.g., mining equipment. As recently as 1989, mining traffic was routed down the SFSR Road because the Johnson Creek Road was closed due to fire activity. The reconstruction of the SFSR Road should provide for emergencies, if other resource values can be protected.

53 The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials. See response to Comment 2 and Appendix E.

54 Reduced production of sediment is a principal objective of the preferred alternative (RA). Only one new major cut and fill is required.

55 The preferred alternative (RA) restricts commercial use of the SFSR Road. See response to Comment 3.

56 The preferred alternative (RA) is designed to result in long-term improvement of fish habitat by reducing erosion and production of sediment from the SFSR Road to the fullest extent practicable while meeting congressional and court directives. Based upon model projections, the preferred alternative reduces sediment, and therefore, improves fish habitat as much or more than any alternative considered, including the Forest Plan direction (Alternative A in the DEIS, Alternative NAFP in this FEIS).

57 The preferred alternative (RA) is designed to have minimum adverse impact on other values while reducing sediment to the fullest extent practicable, meeting congressional direction to pave the road, and meeting court direction to not prevent winter access pending the decisions to be made in this FEIS. However, the act of paving the road surface will unavoidably diminish the traditional semi-primitive nature of access.

58 Safety and sediment reduction must be considered simultaneously. Laws and regulations require certain road design criteria to provide for safe travel. In the preferred alternative (RA) these criteria are met while reducing sediment production to the fullest extent practical.

The Public's Involvement

59 The preferred alternative (RA) provides that road maintenance and snow removal will be done to Forest Service specifications and guidelines. See response to Comment 5.

60 Avoiding new cuts and fills was a principal design criteria for reconstructing the SFSR Road. Under the preferred alternative (RA) only one new major cut and fill is required. Stabilization will be accomplished using state-of-the-art technology. See response to Comment 28.

61 The design criterion of the standard state highway load (plus 10% safety factor) was selected largely to provide a structural strength of the asphalt surface, which will reduce maintenance costs, including providing resistance to frost heaves. This also will allow occasional use of the road by larger vehicles under favorable conditions, but will not accommodate the extremely heavy loads associated with mining operations, which may exceed the 100,000 pound limit. These loads will continue to be transported over the Johnson Creek Road.

62 Reconstruction of the SFSR Road will bypass and abandon segments of the existing SFSR Road. These bypassed segments will be converted to trails restricted to foot traffic and nonmotorized bicycles. See Appendix A.

63 Commercial use of the reconstructed SFSR Road will be restricted under the preferred alternative (RA). See response to Comment 3.

64 The preferred alternative (RA) is designed to minimize the impact on existing resource values to the fullest extent practical while achieving the objectives of sediment reduction and compliance with congressional and court direction. Post road reconstruction recreational use will be monitored, and within budget constraints, appropriate actions taken to meet Forest Plan direction.

65 See comments 58 and 60.

66 The road design in the preferred alternative (RA) was not chosen to accommodate a specific level of traffic, but to reduce sediment and comply with congressional and court direction. The reconstruction is designed to provide a greater degree of slope stability than presently exists. Measures are included to mitigate impacts to wildlife.

67 See response to Comment 64.

68 The preferred alternative (RA) limits commercial use of the reconstructed SFSR Road. See response to Comment 44. In spite of the best planning, winter commercial travel may be necessary for emergencies.

69 In the strictest sense of the terms, environmentalists and sportsmen may be defined as separate interest groups. They are combined in this analysis because it is not practical to define at what point a particular point of view is representative of which group. Both groups share common interests in the SFSR drainage, and generally respond in a similar manner to amenity resource issues. Both groups seek assurance that certain resources and conditions will continue to be available for their own reasons and purposes.

70 Present high levels of sediment in the SFSR and its tributaries resulted from a mix of natural and man-caused factors. The SFSR drainage is naturally highly prone to erosion and consequent sedimentation of streams. Logging and associated road building greatly increased the vulnerability of the drainage to catastrophic erosion and sedimentation of streams. Extraordinary rain-on-snow weather was the catalyst that brought about that unfortunate result. During the late 1960s and early 1970s, more than 500 miles of logging roads in the upper SFSR drainage were closed and revegetated as part of an ongoing effort to reduce human-caused sediment.

The Forest Plan deals with overall management direction to reduce erosion and sedimentation of the SFSR and tributaries. This FEIS deals only with reconstruction and management of the SFSR Road; however, this analysis does consider the cumulative effects of all activities within the drainage.

71 The value of riparian vegetation is discussed in Chapters III and IV. Riparian vegetation is important for intercepting eroded material before it enters the stream, for filtering out and trapping sediment during high flows, and for maintaining streambank stability. Reconstruction of the SFSR Road provides opportunities to enhance riparian vegetation as part of the alternatives that relocate the road away from the river.

72 The EIS for the Warm Lake Fire Complex Fire Recovery Plan analyses potential sediment contributions from fire suppression efforts and potential timber salvage. Scars resulting from fire suppression efforts and potential for erosion in areas close to the river are small. The greatest hazard of sediment resulting from fire occurs during the first year following the fire and decreases thereafter. Precipitation and snow melt conditions have been very favorable following the Warm Lake fire complex. However, reconstruction of the SFSR Road would be postponed if excessive sedimentation were to occur as the result of the Warm Lake fire complex and associated suppression efforts.

73 This hypothesis may be correct. However, a portion of the road in the state's recommended alternative is outside the scope of this project. In addition, mixing gravel and paved surfaces would make maintenance and snow removal more difficult and expensive, and would be less safe for travelers than a uniform road surface.

74 It is true that most Yellow Pine residents moved to the area prior to year-round access via the SFSR Road. The residents have made it clear they expect year-round access via the SFSR Road; the Congress has directed the road be paved, and the court has directed the Forest Service not to prevent winter access pending the decisions to be made in this FEIS. More information on the history of public use of the SFSR road and alternative access to the community of Yellow Pine can be found in the Environmental Assessment for Interim Management of Winter Access in the South Fork Salmon River Drainage.

75 See response to comment 44.

76 Alternative B, the all asphalt alternative in the DEIS, with modifications, is the preferred alternative (RA) in this FEIS. The preferred alternative reduces sediment in the SFSR and tributaries and benefits anadromous fish to as great or greater extent than any alternative considered, including the Forest Plan direction (Alternative NAFB in this FEIS). The preferred alternative is responsive to sportsmen's, environmentalists' and Native Americans' fisheries interests. A principal tradeoff of paving the road is unavoidable diminishment of the area's semi-primitive nature.

77 The cost analysis of various alternatives in the DEIS has been clarified in this FEIS. See Appendix F.

78 The effect of sediment on winter survival of parr has been added to this FEIS.

79 Loss of wild fish populations cannot be fully mitigated. However, adverse impacts of increased access on wild fish populations can be prevented or minimized through public education, proper harvest management and enforcement, monitoring and appropriate response to identified problems. All of these things are provided for in the preferred alternative (RA) or the Forest Plan.

80 This FEIS is concerned with reconstruction of the SFSR Road to reduce sediment and meet congressional and court direction for the road. Other sources of sediment in the drainage are covered in the Boise and Payette Forest Plans and the Warm Lake Fire Complex Fire Recovery Plan EIS. Other sources of sediment in the drainage were considered in the assessment of cumulative impacts in this FEIS. The preferred alternative (RA) is designed to result in beneficial cumulative effects, i.e., a net decrease in sediment in the SFSR and tributaries. (Also see response to 32)

81 A more complete sediment analysis has been included in this FEIS. Using the most current research, the IDT computed the amount of erosion and sediment delivered to streams from cuts, fills, and the road surface for each alternative. In addition, the IDT analyzed the risk of erosion and sediment from construction and the risk of mass wasting. See Chapter IV and Appendix H.

82 The risk of slope failure is nearly the same for all alternatives considered, including Forest Plan direction (NAFP in this FEIS). The preferred alternative (RA) requires only one new major cut and fill. During the course of reconstruction the intent is to decrease erosion from existing cut slopes. The comparative analysis of alternatives and design and evaluation of the selected alternative accounted for the fact that complete stabilization is not possible.

83 The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxics on the SFSR Road; exceptions are strictly regulated by permit. See response to Comment 2.

84 See response to Comment 82.

85 See response to Comments 36 and 80.

86 Under the preferred alternative (RA) the Forest Service will retain jurisdiction over the SFSR Road. The Forest Service has the authority to contract with the county for maintenance. In that event, county maintenance would be done in conformance with Forest Service specifications and guidelines. See response to Comment 5, Road Management and Maintenance Requirements in Chapter II, and Appendix G.

87 The Idaho Outfitters and Guides Licensing Board will be consulted on any Forest Service proposed changes in hunting and fishing seasons within the project area.

88 The preferred alternative (RA) is a modification of Alternative B in the

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DEIS. It includes provisions for reconstructing and paving the SFSR Road and measures to mitigate sediment production during and following construction. The preferred alternative is as or more effective than any alternative considered at reducing sediment and thereby improving water quality and fish habitat. The preferred alternative severely restricts commercial and noncommercial transport of toxic materials on the SFSR Road.

89 A discussion of the water quality limited designation under the Clean Water Act and the TMDL process has been added to Chapters III and IV of this FEIS.

90 Short-term increases in sediment would be encountered under any conceivable plan to modify the road for a reduction in the annual sediment delivery. The alternative would be continued amounts of sediment on an annual basis, which would continue to degrade water quality in violation of the act. Direct sediment removal would be used to offset construction-induced sediment.

The IDT does not expect the preferred alternative (RA) to stimulate additional development within the project area. There are only two private holdings in the project area: what remains of the Knox homestead (5 1/2 acres) and Reed Ranch (191 acres). Paving the road surface is not expected to induce development that would not occur under any of the alternatives considered. Access to these private properties would be maintained under all alternatives considered, including Forest Plan direction (alternative NAFP) to close portions of the SFSR Road. Any additional development on National Forest System lands will be directed by the Forest Plans.

91 The Forest Service is directed by Congress to pave the SFSR Road and is directed by court order not to prevent winter use pending the decisions made as the result of this FEIS. The preferred alternative (RA) contains mitigating measures to minimize water quality risks from winter use, higher traffic volume, and construction activities. The preferred alternative is projected to improve water quality to as great or greater extent than any alternative evaluated, including Forest Plan direction (Alternative A in the DEIS, Alternative NAFP in this FEIS). Under the preferred alternative transport of toxics is strictly regulated to minimize risk to water quality and fish. Alternative NAFP would close a portion of the SFSR road, and thereby reduce but not eliminate the potential for a toxic spill into the SFSR. Given congressional and court direction for the SFSR Road, however, it is unlikely Alternative NAFP could be implemented.

92 Information on the total percent reduction of sediment from each portion of the road prism for each alternative has been added to this FEIS. See Chapter IV and Appendix H.

93 The IDT analysis used information from the Idaho Batholith within the Boise and Payette National Forests considered to be most relevant to the project area.

94 The IDT assessed the relative effects of each alternative on sediment, water quality and fish habitat, including the cumulative effects of road construction, 1989 forest fires, and background production of sediment. The preferred alternative (RA) was designed to result in beneficial cumulative effects, i.e., to achieve a net decrease in the amount of sediment in the SFSR and tributaries. See response to Comment 80 and Chapter IV.

95 The sediment model used in this FEIS uses the latest equations developed by Walt Megahan of the Intermountain Research Station in Boise, Idaho to determine erosion and sediment delivery. These equations were applied to a representative sample of more than 1,500 cross sections of the actual survey data on the road, including cuts,

fills, road tread and ditch information. The model accounts for erosion, slope and road surface mitigation, slope storage and sediment delivery to the nearest definable channel.

The sediment model used in this FEIS contains the most precise quantitative analysis to date of the SFSR Road prism and accounts for erosion of cuts, fills, road tread and ditches and routes the eroded material to deposition in the nearest channel. A comparison of mitigation and surfacing options over the total project was used for alternative analysis. All critical areas are accounted for. Representative samples bracket problem areas and are concentrated where there are extensive cuts and fills.

96 Paving the road surface is not expected to induce development or use of private land that would not occur with any other road surface or under any alternative considered. None of the alternatives considered, including Forest Plan direction (Alternative NAFP) would deny access to private land within the project area. See response to Comment 90.

97 Court order proscribes the Forest Service from preventing winter access to and from Yellow Pine on the SFSR Road pending the decisions to be made in this FEIS. Whether or not there is winter access will depend upon some entity other than the Forest Service plowing the road in winter. The economic and social effects and long-term population projections for Yellow Pine with and without access are unknown and, in any event, are outside the scope of this analysis. However, it is expected that these things will be more influenced by mineral prices than by winter access.

98 Timber harvest within the project area is discussed in the Forest Plan and is not changed by the preferred alternative (RA).

99 The preferred alternative (RA) is not expected to increase development of existing mining operations or future mining claims in the SFSR drainage. Any increases in these activities will be determined by mineral prices without regard to the type of surfacing on the SFSR road. Existing laws and regulations protect the SFSR from new commercial dredge and placer mining.

100 The preferred alternative (RA) is not expected to result in a significant shift in existing traffic from alternate routes to the SFSR Road. The Johnson Creek Road will continue to be the primary access to mining operations. The novelty of the paved surface on the SFSR Road is expected to attract new visitors and different vehicle types, e.g., recreational vehicles, to the area. The reconstructed road will be designed to meet safety standards, and will have appropriate speed limits and signing. The preferred alternative contains measures to mitigate the environmental effects of increased traffic, notably the potential effects of winter access on wildlife.

101 The relative risk of chemical spills associated with each alternative is compared in Chapter II. The preferred alternative (RA) reduces the risk of chemical spills as compared to the present situation. It contains provisions to minimize the risk of such spills; bulk fuel transport is prohibited. See response to Comment 2 and Appendix E. Forest Plan direction (Alternative NAFP) would not eliminate the potential for toxic spills; however, the risk would be reduced due to reduced exposure as the result of closing a portion of the SFSR Road.

102 Paving the SFSR Road does not change jurisdictional responsibilities. The Forest Service retains responsibility for maintenance. Maintenance may be performed by the county. In that event, the county would maintain the road in accordance with Forest Service specifications and guidelines. Jurisdiction of the SFSR Road is discussed in the

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Environmental Assessment on Interim Management of Winter Access in the South Fork Salmon River Drainage. Maintenance specifications and guidelines are contained in Appendix G. See response to Comment 45.

103 The language is found in the Report of the Senate Committee on Appropriations (No. 100-410) on the Bill (H.R. 4867), July 6, 1988. Congressional direction to pave the SFSR Road and court direction to not prevent winter access are not discretionary. It is unlikely that closing the SFSR Road from the Warm Lake Highway to the East Fork of the SFSR could be implemented. The Forest Plan direction (Alternative NAFFP) is analyzed here to display relative environmental effects. The results of this analysis are that the preferred alternative (RA) reduces sediment production and facilitates achieving water quality objectives to as great or greater extent than Forest Plan direction.

104 An alternative that would pave the existing alignment of the SFSR Road (Alternative EA) was added to this FEIS. See Chapter II.

105 The Forest Service is proscribed by court order from preventing winter access via the SFSR Road pending the decisions to be made in this FEIS. Winter access options are evaluated in the EA and subsequent Decision Notice on Interim Management of Winter Access in the South Fork Salmon River Drainage, in the SFSR Road Project DEIS and in this FEIS.

106 The Monitoring Plan (Appendix D) includes a discussion of how the results of effectiveness monitoring will be used to ensure that water quality objectives are achieved. The Forest Plans contain long-term monitoring direction and provides for periodic evaluation of forest outputs, including fish, fish habitat and water quality.

Instream sediment monitoring is included in baseline monitoring in the Forest Plans. Relative turbidity is a measure of the effectiveness of mitigation measures during road construction. The same monitoring program was included in the analysis of all action alternatives.

107 Road user cost is a standard consideration in road design. Road user cost was analyzed to determine the life cycle cost for the road. Road user cost was a consideration, but did not have a major influence on the choice of the preferred alternative (RA). In this FEIS construction and maintenance costs – which did play a significant role in choice of the preferred alternative – are displayed with and without road user cost.

108 Except for occasional grazing by animals used by recreationists, there is no grazing of domestic livestock in the project area.

109 Over the past five years the population of Yellow Pine varied from 35–50 winter residents and from 75–225 summer residents. Mining provides the primary economic base for the community. Recreation and tourism are secondary. These activities support businesses providing lodging, food, and retail trade.

110 Maintenance funds are not guaranteed. The availability of maintenance funds is dependent upon the normal budget process. The importance of proper maintenance to minimize sediment production was an important consideration in the design of the preferred alternative (RA). Paving the road surface results in the lowest maintenance cost of all road surface options.

111 The long-term transportation plan for the general area is discussed in each

Forest Plan and Forest Plan EIS. That portion of each Forest Plan relating to the SFSR Road is amended by the decision to implement the preferred alternative (RA) in this FEIS. Winter access to Yellow Pine and mining operations were analyzed in the EA on Interim Management of Winter Access in the South Fork Salmon River Drainage. The decision was to allow plowing Johnson Creek Road and close the SFSR Road in winter. This decision was challenged and the court ruled the Forest Service may not prevent winter access via the SFSR Road pending the decisions in this FEIS. These issues were not revisited in this analysis. See responses to Comments 3, 6 and 44 for the relationship of the selected alternative to alternative transportation routes serving the area.

112 The alignment of the reconstructed road is midslope and benches, not on ridge tops. Only one major new cut and fill is required. The road surface will be designed to standard state highway specifications plus 10% to minimize frost heaves and otherwise reduce maintenance, and to allow occasional use by vehicles weighing up to 100,000 pounds under favorable conditions. The road is not designed to handle extremely heavy loads. Drainage design will vary to fit site conditions. The major objective will be to handle surface runoff while minimizing sediment production.

113 The difficult sections of the reconstruction project are primarily on the north end of the project. The last 10 miles of road are next to the river and generally are next to steep cut banks. However, there is not necessarily a direct relationship between difficulty of construction and hazard to water quality and fish habitat. The alignment and design of the preferred alternative (RA) were selected to minimize the hazard of erosion and contribution of sediment to the SFSR and tributaries.

114 The preferred alternative reduces sedimentation of fish spawning, incubation and rearing habitats to as great or greater extent than any alternative evaluated, including Forest Plan direction (Alternative NAFP). The environmental effects of closing a portion of the SFSR Road as provided for in the Forest Plan was evaluated, however, it is unlikely Alternative NAFP could be implemented due to congressional direction to pave the road and court direction regarding winter access.

115 The FEIS addresses federally listed endangered species. A formal Biological Opinion by the U.S. Fish and Wildlife Service found the preferred alternative (RA) "...is not likely to jeopardize the continued existence on the endangered bald eagle...[or]...the endangered gray wolf." The preferred alternative contains specific mitigating measures for the Northern Rocky Mountain gray wolf as provided by the U.S. Fish and Wildlife Service. See Appendix I.

116 The need for Section 404 permits is recognized in the FEIS. The required permits will be obtained before road reconstruction begins.

117 A 14-wide roadway (12-foot travelway with 1 foot shoulders) was determined to be the widest continuous width possible without having to make many major cuts and fills which would greatly increase the hazard of erosion and sedimentation of the SFSR and tributaries. A road width of 20 feet would have an unacceptable environmental cost.

118 An alternative that would reconstruct and pave the road on the existing alignment (Alternative EA) was added to this FEIS.

119 The decline in the number of anadromous fish in the SFSR drainage is due

to a number of factors, including overfishing in marine and freshwater fisheries, degraded spawning and rearing habitat, and mortalities at federal hydroelectric projects on the main-stem Snake and Columbia Rivers, the latter being the most critical. The SFSR drainage contains the most important wild summer chinook salmon habitat remaining in the Columbia River drainage. This habitat has been severely degraded by sediment resulting from natural and man-caused erosion. The SFSR Road contributes to this problem. Hundreds of millions of dollars have been and will be invested to provide fish passage and reduce mortalities at main-stem dams. Marine and freshwater fisheries have been sharply reduced or eliminated. The success of these activities hinges upon restoration and protection of SFSR anadromous fish spawning and rearing habitat. Minimizing the contribution of sediment from the SFSR Road is an important part of this effort.

120 The preferred alternative (RA) will maintain access to the SFSR drainage via the SFSR Road.

121 The Northern Rocky Mountain gray wolf is classified as an endangered species. Central Idaho has been identified as an area essential to recovery of the gray wolf. The reported sightings and tracks in the South Fork Salmon River Drainage suggests the presence of wolves in the area. See Chapter III and response to Comment 115.

122 The preferred alternative (RA) calls for reconstructing and paving the SFSR Road. The Forest Service is enjoined by court order from preventing winter access pending the decisions in this FEIS. See responses to Comments 5 and 6.

123 The preferred alternative (RA) contains provisions to severely limit transport of toxic materials on the SFSR Road. See response to Comment 2. Mitigating measures will minimize the impact of human disturbance on chinook salmon and wintering big game animals.

124 Congress has directed the Forest Service to pave the SFSR Road. A court order restrains the Forest Service from preventing winter access pending the decisions in this FEIS. It is unlikely that Forest Plan direction (Alternative NAFP) could be implemented.

125 Restoring and protecting critical salmon habitat is identified as a primary goal of and is directed in the Payette and Boise Forest Plans. Achieving this goal is a principal purpose of the preferred alternative (RA) in this FEIS.

126 The preferred alternative (RA) in this FEIS is a modified version of Alternative B in the DEIS. Primary modifications include: (1) reduced length of road relocation; (2) additional mitigating measures; (3) more site-specific road design; (4) additional construction and post-construction erosion prevention criteria.

127 It is unlikely Alternative A in the DEIS (Alternative NAFP in this FEIS) could be implemented. Congress directed the Forest Service to pave the SFSR Road. A court order restrains the Forest Service from preventing winter access pending the decision in this FEIS. The preferred alternative (RA), reconstructing and paving the SFSR Road, will reduce sediment to as great or greater extent than Alternative NAFP while meeting congressional and court direction.

128 See response to Comment 127.

129 The preferred alternative (RA) in this FEIS is a modified version of the rec-

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ommended Alternative B in the DEIS for the SFSR Road Project. See response to Comment 126.

130 The selected alternative (RA) in this FEIS is a modified version of the recommended Alternative B in the DEIS for the SFSR Road Project. See response to Comment 126.

131 The design of the reconstructed road calls for a one-lane, 12-foot wide travelway with 1-foot shoulders and turnouts to allow two-way traffic. This width and the winding nature of the road will discourage people from driving fast. Road design, speed limits and appropriate signing will facilitate safe travel. Asphalt paving will be done to resist frost heaves and reduce maintenance, and to allow occasional use by 100,000 pound vehicles during favorable conditions.

132 The preferred alternative (RA) calls for asphalt surfacing the entire realigned SFSR Road. By court order the Forest Service may not prevent winter access pending the decisions in this FEIS. The Forest Service does not intend to plow the road in winter. The road may be plowed by others in conformance with Forest Service specifications and guidelines. See response to Comment 5.

133 The SFSR Road is not primarily responsible for the large amounts of sediment adversely affecting salmon spawning and rearing habitat in the SFSR and tributaries. This sediment is the result of natural and man-caused erosion, the latter notably resulting from logging and associated road building activity in the drainage. During the late 1960s and early 1970s, more than 500 miles of logging roads in the upper SFSR drainage were closed and revegetated. The SFSR Road continues to contribute significant sediment to the SFSR. The preferred alternative (RA) is designed to minimize that contribution.

134 The adverse effects of human disturbance on wintering big game animals is well documented in scientific observations and literature. These effects likely would be quite different in the SFSR drainage than in an area like Yellowstone Park where animals are not hunted and are accustomed to human activity. Increased levels of human activity in the SFSR drainage, particularly during severe winters, could significantly reduce the use of winter range and otherwise stress big game animals.

135 The preferred alternative (RA) provides for paving the SFSR Road. The Forest Service is constrained by court order from preventing winter access pending the decisions in this FEIS. The Forest Service does not intend to plow the road in winter. Others may plow the road in accordance with Forest Service specifications and guidelines. The Forest Service may impose periodic, temporary road closures for safety, to protect wintering big game animals from human disturbance during severe winters, or for other resource-protection purposes.

136 The road design calls for a one-lane travelway with turnouts to allow two-way traffic. This design will discourage fast driving. The road will be posted with a speed limit of 25 mph or less, and will be appropriately signed to warn drivers of hazardous conditions inherent in a one-lane, winding road. The preferred alternative (RA) provides for the contingency of special regulations, including temporary road closures during extreme winters if necessary for safety or to protect wildlife.

Chapter VI

137 The Forest Service has statutory responsibility for decision making on lands under its jurisdiction. The Congress has directed that the SFSR Road be paved. The court has directed that winter access may not be prohibited pending the decisions in this FEIS. The preferred alternative (RA) complies with both directives while meeting Forest Service obligations to manage and protect public resources within the project area.

138 The Reed Ranch and a small portion of the original Knox Ranch are the only private property traversed by the SFSR Road. The Forest Service has a 70-foot wide easement through these properties.

139 The Forest Service is responsible for maintaining the SFSR Road. Maintenance may be contracted to the county. In that event maintenance would be done in accordance with Forest Service specifications and guidelines. The availability of Forest Service road maintenance funds is dependent upon the normal budget process. Maintenance funds are not guaranteed. See response to Comment 102.

140 The preferred alternative (RA) limits the use of the SFSR Road for commercial hauling, i.e., any vehicle in a size class greater than 1 1/2 ton that is for hire. Limited commercial use will be regulated through a formal management plan. See Appendix E. The preferred alternative severely restricts the commercial and noncommercial transport of toxic materials on the SFSR Road. See response to Comment 2. The road will be one-lane, with a 12-foot travelway and 1-foot shoulders except at turnouts to avoid major cuts and fills that would create an erosion hazard. This design will limit the size of vehicles using the road. The asphalt surfacing will meet standard highway specifications plus 10% to resist frost heaves and minimize maintenance and to allow occasional use by 100,000 pound vehicles during favorable conditions. It will not be designed to carry extremely heavy loads that may be associated with mining.

141 Geotextile materials will be among the alternative construction specifications considered in the final design of the road surface and will be used as appropriate.

142 Solicitation for bids on road reconstruction will be advertised. This becomes public information after bid opening, and a copy will be available upon request.

143 Long experience has demonstrated that importing nonindigenous summer chinook and summer steelhead fry generally is not effective at restoring depleted fish populations. Importantly, excessive sediment adversely affects rearing habitat for fry as well as degrading conditions for spawning and incubation. In recent years natural production of summer chinook in the SFSR drainage has been supplemented with the progeny of native fish reared for a year or more in a hatchery.

144 The three-mile stretch of SFSR Road from Secesh River to Three Mile Creek is outside the scope of this FEIS. It is not affected by the preferred alternative (RA).

145 The preferred alternative (RA) in this FEIS is a modified version of Alternative B in the DEIS. The preferred alternative provides for paving the SFSR Road. The Forest Service is constrained by court order from preventing winter access pending the decisions in this FEIS. The Forest Service may limit winter access as necessary for public safety or to protect public resources. See response to Comment 135.

146 Congress directed the Forest Service to pave the SFSR Road. A court order restrains the Forest Service from prohibiting access pending the decisions in this FEIS. These directives are not discretionary. It is unlikely that abandoning a portion of

the SFSR Road, as proposed in the Forest Plan, could be successfully implemented. The preferred alternative (RA) is designed to comply with congressional and court direction, reduce sediment and improve water quality to the fullest extent practical, and minimize adverse impact on other forest values. The project area would not qualify as wilderness due to the presence of the road. The SFSR has been nominated for consideration under the provisions of the National Wild and Scenic Rivers Act. The presence of the SFSR Road likely would limit designation, if any, to a "recreational river."

147 The preferred alternative (RA) in this FEIS is a modified version of Alternative B in the DEIS. The preferred alternative provides for paving the SFSR Road. The Forest Service is constrained by court order from preventing winter access pending the decisions in this FEIS. The Forest Service may limit winter access as necessary for public safety or to protect public resources. See response to Comment 135.

148 A 14-foot wide roadway (12-foot travelway with 1 foot shoulders) was determined to be the widest continuous width possible without having to make many major cuts and fills which would greatly increase the hazard of erosion and sedimentation of the SFSR and tributaries. The reconstructed road will be designed to meet safety standards and will have appropriate speed limits and signing.

149 Winter access option 3 in the DEIS has been incorporated into the preferred alternative (RA). By court order, the Forest Service may not prohibit winter access pending the decisions in this FEIS. The Forest Service does not intend to plow the SFSR Road in winter. Snow plowing by others will be required to comply with Forest Service specifications and guidelines. See response to Comment 5.

150 Concentrations of big game animals along roads in winter is not an indication animals are not being adversely impacted by road use. Increased levels of road use may result in animals being hit by vehicles, in increased poaching and in displacement of animals into other areas where they may overuse winter forage and/or compete with other animals for limited forage. See response to Comment 134.

151 It is unlikely Alternative A in the DEIS (Alternative NAFP in this FEIS) could be implemented. Congress directed that the SFSR Road be paved. The court ordered the Forest Service may not prohibit access pending the decisions in this FEIS. The preferred alternative (RA) complies with those directions while reducing sediment to as great or greater extent than any alternative considered, and minimizing impact to other resource values.

152 The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials, including bulk fuel, on the SFSR Road. Exceptions will be regulated through a formal permit system. See response to Comment 2 and Appendix E.

153 The Congress directed the Forest Service to pave the SFSR Road. This direction is not discretionary.

154 Congress directed the SFSR Road be paved. The court directed the Forest Service may not prohibit access or snow plowing pending the decisions in this FEIS. The Forest Service does not intend to plow the road. Others who wish to plow the road will be required to meet Forest Service specifications and guidelines. See response to Comment 5.

155 The preferred alternative (RA) does not put riparian habitats at risk; in fact, relocation will permit rehabilitation of some riparian areas. Construction activities will be conducted to avoid damage to riparian areas.

156 The Forest Plan calls for eliminating a portion of the SFSR Road; other portions would remain open. This direction is reflected in Alternative NAFP, however, it is unlikely this alternative could be implemented. Congress directed the road be paved. The court directed the Forest Service may not prohibit access pending the decisions in this FEIS. The Forest service does not have discretion to redirect funds congress appropriates for specific purposes. Rehabilitating old logging roads elsewhere in the drainage is outside the scope of this FEIS, but is covered in the Forest Plan.

157 A more complete sediment analysis has been included in this FEIS. See response to Comment 81.

158 The risk of sedimentation from the 1989 Warm Lake fire complex is analyzed in the Warm Lake Fire Complex Fire Recovery Plan EIS. This risk was included in the analysis of cumulative effects in this FEIS. See response to Comment 72.

159 This FEIS focuses on analyzing alternative ways to reduce the production of sediment from SFSR Road while meeting congressional and court direction. The cumulative effects analysis includes contributions of sediment from all other sources in the drainage. See responses to Comments 36, 72 and 80.

160 A primary objective of the preferred alternative (RA) is to reduce sediment in the SFSR and tributaries. This is in conformance with Forest Plan direction.

161 The preferred alternative (RA) is designed to reduce sediment in the SFSR and tributaries. Mitigating measures are included to minimize sediment production during construction, and to directly remove from the SFSR and tributaries as much or more sediment than might be produced during construction. The risk of sediment production from burned areas is greatest during the first year after the fire, and declines sharply thereafter. Nonetheless, reconstruction of the SFSR Road would be postponed or interrupted if erosion from burned areas threatens to produce large amounts of sediment.

162 A formal Biological Opinion issued by the U.S. Fish and Wildlife Service in February 1989 determined the preferred alternative would not threaten the recovery of the endangered bald eagle or endangered gray wolf. The USFWS provided specific mandatory and discretionary mitigating measures for gray wolf. These measures have been incorporated into the selected alternative. See response to Comment 115 and Appendix I.

163 The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials, including bulk fuel, on the SFSR Road. Exceptions are regulated by permit. See response to Comment 2 and Appendix E. The SFSR Road will not become a major haul road for chemicals enroute to mining operations. See response to Comment 44. All alternatives considered would have some potential for a worst-case toxic spill. Alternative NAFP, the Forest Plan direction, would have the least but not no risk. The worst case scenario would be total contamination of the SFSR below the point of spill. This could happen on any stream paralleled by a road. The preferred alternative's limits on transport of toxics are more restrictive than for most roads. A worst case scenario would be the result of an accidental spill of an illegal haul.

164 The preferred alternative (RA) is designed to reduce sediment from the SFSR Road to the fullest extent practicable while complying with congressional direction to pave the road and court direction to not prohibit access pending the decisions in this FEIS. Road design and mitigating measures are designed to minimize risk to and impact on other resource values.

165 The preferred alternative (RA) is a modified version of Alternative B in the DEIS. See response to Comment 126.

166 The preferred alternative (RA) is a modified version of Alternative B in the DEIS. See response to Comment 126.

167 Winter access on the SFSR Road poses a potential risk to wintering big game animals, particularly during severe winters. The preferred alternative (RA) contains measures to mitigate this risk. See responses to Comments 134 and 150.

168 The preferred alternative (RA) is a modified version of Alternative B in the DEIS. See response to Comment 126.

169 Winter use of the SFSR Road has the potential to influence big game use of – not reduce – two-thirds of the big game winter range in the project area. i.e., the road is within one mile of two-thirds of the winter range. See responses to Comments 134 and 150.

170 Contemporary winter use within the project area depends in part upon whether the road is plowed. Future winter recreation also will depend upon whether or not the road is plowed. The Forest Service does not intend to plow the road. If it is plowed by others, the Forest Service will monitor the environmental effects, including effects on wintering deer and elk. The preferred alternative (RA) contains mitigating measures, including provision for temporary winter road closures as necessary for public safety and wildlife protection.

171 The preferred alternative (RA) provides for a 14-foot wide roadway (12-foot wide travelway with 1-foot shoulders). Fourteen feet is the widest practical continuous width without major cuts and fills which would greatly increase cost and the risk of erosion and consequent sedimentation of the South Fork and tributaries. See responses to Comments 3, 61 and 117.

172 Restricted hazardous materials is defined on Page IV-238 of the Forest Plan. See response to Comment 2.

173 The Forest Service does not intend to plow the SFSR Road in winter. Others may plow the road in conformance with Forest Service specifications and guidelines. See response to Comment 5, Road Management and Maintenance Requirements in Chapter II, and Appendix G.

174 The preferred alternative (RA) restricts commercial use of the SFSR Road through road design, vehicle weight limitations and frequency and time of access. See Appendix E.

175 Breakup limits on the Warm Lake Highway are established by the county and are outside Forest Service jurisdiction. These breakup limits will restrict access to the SFSR Road and other roads in the SFSR drainage.

176 The Johnson Creek-Landmark Road is outside the scope of this FEIS.

177 The three-mile section of the SFSR Road from Secesh to the end of the road is outside the scope of this FEIS and is not affected by the preferred alternative (RA).

178 The three-mile section of the SFSR Road from Secesh to the end of the road is outside the scope of this FEIS and is not affected by the preferred alternative (RA).

179 The potential erosion hazard associated with the 1989 Warm Lake fire complex was analyzed in the Warm Lake Fire Complex Fire Recovery Plan EIS. This hazard was included in the cumulative effects analysis in this FEIS. See response to Comments 29, 36 and 72.

180 The preferred alternative (RA) is designed to reduce sediment from the SFSR Road to the fullest extent practical while meeting congressional direction to pave the road and court direction regarding access. Measures have been included to mitigate adverse effects on other resource values.

181 A worst case toxic spill could totally contaminate the SFSR downstream from the point of spill. A worse case spill could occur in roaded parts of the drainage under any of the alternatives considered, although the risk would be less under Forest Plan direction (Alternative A in the DEIS, Alternative NAFF in this FEIS). The preferred alternative (RA) severely restricts transport of toxics on the SFSR Road. A worst case spill would only occur as the result of an accident involving an illegal haul. See responses to Comments 2 and 163 and Appendix E.

182 The preferred alternative (RA) in this FEIS is a modified version of Alternative B in the DEIS. See response to Comment 126.

183 The fact that wintering big game animals are observed along heavily traveled highways does not mean that adverse impacts do not occur. See responses to Comments 134 and 150.

184 A more complete sediment analysis has been included in this FEIS. Using the most current research, the IDT computed the amount of sediment produced from cuts, fills, and the road surface for each alternative. In addition, the IDT conducted a risk analysis and computed the amount of sediment likely to result from construction and analyzed the risk of mass wasting. See responses to Comment 95.

The sediment contribution of each alternative was modeled by year over five years with a new, state-of-the-art model using field data from research plots in the Idaho Batholith. The specific effects on fish habitat are unquantifiables due to changes in flow, sediment transport, scouring, armoring, etc. The model can predict sediment delivery to the stream.

185 The erosion hazard resulting from the 1989 Warm Lake fire complex is analyzed in the Warm Lake Fire Complex Fire Recovery Plan EIS. The cumulative effects of the Warm Lake fire complex, other activities within the drainage and SFSR construction activities were analyzed in this FEIS. See responses to Comments 29, 36, and 72.

186 The road is not designed to accommodate large vehicles carrying chemicals that are toxic to fish. The road is designed to minimize sediment to the fullest extent practicable while complying with congressional direction to pave the road and court direction to not prohibit access pending the decisions to be made in this FEIS. The design is for a one-lane road, 14 feet wide (12-foot wide travelway with 1-foot shoulders) with turnouts to accommodate two-way traffic. The asphalt surface is designed to highway standards plus 10% to reduce frost heaves and maintenance and to allow occasional use by 100,000 pound vehicles under favorable conditions. Commercial transport and all transport of toxic materials are severely limited. See responses to Comments 2 and 3 and Appendix E.

187 The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials on the SFSR Road with exceptions regulated by permit. See response to Comment 2 and Appendix E.

188 The preferred alternative (RA) provides for a 14-foot wide road bed – 12-foot wide travelway with 1-foot shoulders.

189 See response to Comment 184.

190 This FEIS includes analysis of erosion and sediment delivery during the construction period. Specific mitigating measures are included in the preferred alternative (RA). See response to Comment 29 and Chapter II.

191 The potential for mass wasting and resultant sediment delivery were included in the FEIS analysis of alternatives. See response to Comment 184.

192 The use of a model derived from guidelines found in Stowell et al. (1983) to quantitatively predict effects of sediment on fish and fish habitat is inappropriate in the SFSR drainage. Burns and Edwards (Forest Planning Record) documented different functional relationships among land disturbance and fish habitat than those in examples found in Stowell et al. In addition, Stowell et al. does not provide a basis to predict continued recovery in the SFSR. The model only accounts for the addition of sediment, and cannot be used to evaluate the reduction in sediment from this project. Limitations of Stowell et al. are described in Appendix B of the Forest Plan FEIS. Further qualification there is based upon Chapman and McLeod (1987) and precludes the use of Stowell et al. for site-specific analysis of individual projects in the SFSR. According to the summary in Stowell et al., the model can be appropriately used to demonstrate changes greater than 10%–20% in habitat quality and then primarily to reflect habitat loss.

A comparison of the amount of sediment delivered to the SFSR using a state of the art model developed in the Idaho Batholith was used for each alternative (this was added after the DEIS). However, this model only compares the sediment yield (the quantity of sediment produced from the watershed upstream from a given stream section) and the amount of sediment delivered to the SFSR. The effects of sediment on fish habitat are not quantified, and are quantitatively unpredictable from the amount of sediment delivered to a stream. Effects of sediment on fish habitat are determined by how the sediment is routed (the process of deposition and transport of

sediment through a system), in addition to the amount of sediment delivered. A 100% decrease or increase in the quantity of sediment delivered to a stream could have little or no effect on fish habitat if there is no net change in the quantity of sediment that is deposited or transported. Sediment added in excess of the transport capacity will be deposited. Conversely, amounts less than the transport capacity can be removed to varying degrees. Removal could be dramatic if flows were sufficient to transport large amounts of sediment, but the amount of sediment being routed was relatively low. This relationship differs for each stream, and is poorly understood for the SFSR. Sediment transport and deposition are influenced by the timing and energy of peak flows in a stream, which are ultimately determined by the weather.

Certain features of the channel such as substrate composition and morphology also influence the routing of sediment in a stream. The model in Stowell et al. attempts to compensate for this by using linear responses for changes in embeddedness from an increase in sediment yield over "natural" levels. The model does not consider armor or flow, and only assumes what natural levels were to begin with. There is speculation that the surface materials of the SFSR have become bonded together to form an armored layer that inhibits sediment transport out of the system. A fluctuating trend in the percent fines from core sampling the spawning areas since 1982 may be related to this armoring, or could be a result of the decreased flows over the past few years. Within this framework, any changes in sediment routing resulting from reconstructing the SFSR Road (Alternative RA) or other action alternatives, are not quantitatively predictable.

Despite its shortcomings, the best quantitative comparison of the alternatives presently available is the amount of sediment delivered to the stream. Since the purpose of the project is to reduce sediment delivery from the SFSR Road, this is the most direct and accurate means of comparing alternatives. The alternatives that reduce the greatest amount of sediment will have the greatest potential benefit to fish.

193 A discussion of the water quality limited designation under the Clean Water Act and the TMDL process has been added to Chapters III and IV of this FEIS. The preferred alternative (RA) reduces sedimentation of the SFSR to as great or greater extent than any alternative considered, including Forest Plan direction to close a portion of the SFSR Road (Alternative NAFP). The preferred alternative, including mitigating measures to prevent/minimize sediment production during construction, maintenance and snowplowing, is designed to reduce sediment to the fullest extent practicable in compliance with nonpoint source requirements of the Clean Water Act.

194 The DEIS discussion of monitoring has been expanded in this FEIS. See Appendix D Monitoring Plan.

195 The court ordered the Forest Service may not prohibit access or snow plowing of the SFSR Road pending the decisions to be made in this FEIS.

196 Appendix A in both Forest Plans contains the schedule for timber sales. Road access to timber sales over the next 20 years is not affected by the preferred alternative (RA) in this FEIS except that this access – as with all other action alternatives – will be more convenient for hauling logs than the Forest Plan direction to close a portion of the SFSR Road.

197 Increased access has potential for adverse impacts on wintering big game animals, particularly during severe winters. See response to Comments 134 and 150.

- 198** The design standards for the road are contained in Appendix C.
- 199** The criteria for commercial permits, and specifications for size limits on vehicles are contained in Appendix E.
- 200** Erosion, and sediment delivery and transport have been scientifically investigated in the SFSR drainage to an extent perhaps unequalled elsewhere. State-of-the-art modeling, based on research plots within the Idaho Batholith, was employed to estimate and analyze the effects of the alternatives considered. See responses to Comments 95 and 184.
- 201** The Northern Rocky Mountain gray wolf is classified as an endangered species. Central Idaho has been identified as an area essential to recovery of the gray wolf. The reported sightings and tracks in the South Fork Salmon River Drainage suggests the presence of wolves in the area. The U.S. Fish & Wildlife Service provided a formal Biological Opinion containing mandatory and discretionary mitigating measures which have been incorporated into the preferred alternative (RA). See response to Comment 115 and Appendix I.
- 202** The preferred alternative (RA) provides for paving the SFSR Road in conformance with congressional direction. A court order provides that the Forest Service may not prohibit winter access or snow plowing pending the decisions in this FEIS. See response to Comment 5.
- 203** A 14-wide roadway (12-foot travelway with 1-foot shoulders and turn-outs) was determined to be the widest continuous width possible without having to make many major cuts and fills which would greatly increase cost and the hazard of erosion and sedimentation of the SFSR and tributaries. The reconstructed road will be designed to meet safety standards and will have appropriate speed limits and signing.
- 204** A court order provides that the Forest Service shall not prohibit access or winter plowing of snow pending the decisions in this FEIS. The Forest Service does not intend to plow the road in winter. Others may plow the road and provide winter maintenance in conformance with Forest Service specifications and guidelines. See response to Comment 5.
- 205** A 14-foot wide roadway was determined to be the widest continuous width possible without having to make many cuts and fills which would greatly increase cost and the hazard of erosion and sediment production. Varying road width from 14 to 16 feet where this could be accomplished without cuts and fills would create a safety hazard by encouraging drivers to speed up in the wider sections only then to be confronted with a necked down roadway.
- 206** Restrictions on commercial hauling are contained in Appendix E.
- 207** The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials on the SFSR Road. See response to Comment 2 and Appendix E.

- 208** The preferred alternative (RA) severely restricts transport of toxic materials on the SFSR Road. See response to Comment 2 and Appendix E. The preferred alternative contains measures to mitigate the potential effects of increased winter access on wintering deer and elk. A formal Biological Opinion by the U.S. Fish and Wildlife Service determined that the preferred alternative does not threaten recovery of the gray wolf. USFWS mandatory and discretionary measures to protect gray wolf recovery have been incorporated into the preferred alternative. See Appendix I.
- 209** Forest Service analysis indicates that paving the SFSR Road will reduce sediment, improve water quality and benefit anadromous fish to as great or greater extent than any alternative considered. See the Comparison of the Alternatives in Chapter II. Congress directed funding to pave the SFSR Road. The Forest Service may not redirect this funding elsewhere.
- 210** Forest Plan direction for the SFSR Road (Alternative A in the DEIS, Alternative NAFP in this FEIS) was to eliminate a portion of the road and gravel the remaining portions. Given congressional direction to pave the road and court direction to not prevent winter access pending the decision to be made in this FEIS, it is unlikely Alternative NAFP could be implemented.
- 211** Forest Service analysis indicates that paving the SFSR Road will reduce sediment, improve water quality and benefit anadromous fish to as great or greater extent than any alternative considered. See the Comparison of the Alternatives in Chapter II. Mitigating measures have been incorporated into the preferred alternative (RA) to minimize impacts on other resource values.
- Tiering is the use of previous information and decisions so that the same analysis isn't repeated. The Forest Plan and Forest Plan EIS are separate documents, the former required by the National Forest Management Act, the latter by the National Environmental Policy Act (NEPA). This FEIS is tiered to the Forest Plan EIS, which analyzed alternative courses of action. This is appropriate under NEPA and is unrelated to decisions in the Forest Plan that implement the alternative course of action chosen in the Forest Plan EIS. The preferred alternative (RA) is inconsistent with the decision for the SFSR Road in the Boise and Payette National Forest Plans; therefore, the Forest Plan direction for the SFSR Road must be amended. These amendments are made in the Record of Decision for this FEIS.
- 212** The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials on the SFSR Road. See response to Comment 2 and Appendix E.
- 213** The role of user cost in road design and its influence on the recommendation of Alternative RA are discussed in the response to Comment 24. The relative cost efficiency of all alternatives considered is displayed in compared in Chapter II. The preferred alternative has the highest construction cost, the least user costs and lowest maintenance cost of any alternative considered. Given congressional direction to pave the road, the Forest Service sought the most cost effective design for paving the road while meeting court direction and resource protection objectives.
- 214** Erosion hazard and potential sediment production from the Warm Lake fire complex are analyzed in the Warm Lake Fire Complex Fire Recovery Plan EIS. This analysis was incorporated in the analysis of cumulative effects in this FEIS. See responses to Comments 29, 36 and 72.

215 The Environmental Assessment on Interim Management of Winter Access in the South Fork Salmon River Drainage reviews the history of the winter access issue. The effects of winter access on wildlife are discussed in Chapter IV of this FEIS. Measures incorporated into the preferred alternative (RA) to mitigate the effects of increased winter access on wildlife are discussed in Chapter II. Options for winter access are analyzed in the Record of Decision and EA for Interim Management of Winter Access in the South Fork Salmon River Drainage, in the SFSR Road Project DEIS and in this FEIS.

216 The preferred alternative (RA) restricts all commercial hauling and severely restricts commercial and noncommercial transport of toxic materials on the SFSR Road. See response to Comment 2, Appendix E, and response to Comment 3.

217 The transportation system within the Forest is addressed in the Forest Plan and Forest Plan EIS. Any future proposal to pave the Lick Creek Road would be evaluated in a separate analysis within the context of Forest Plan direction and is outside the scope of this FEIS.

218 The preferred alternative (RA) requires only one new major cut and fill. Mitigating measures are included to minimize sediment production during construction. In addition, sediment will be directly removed from the SFSR and tributaries in amounts equal to or greater than the amount of sediment projected to be produced during construction.

219 The preferred alternative (RA) requires amending the Forest Plan direction for the SFSR Road. The Record of Decision implementing the preferred alternative (RA) in this FEIS also amends the Forest Plan.

220 This FEIS focuses on reconstruction and paving the SFSR Road. It includes an analysis of cumulative effects of other sediment-producing and sediment-reducing activities in the drainage. The Forest Plan and Forest Plan EIS address the comprehensive range of activities within the Forest and SFSR drainage.

221 The preferred alternative (RA) requires amending the Forest Plan direction for the SFSR Road. This amendment is accomplished in the Record of Decision for this FEIS.

222 Congress directed the appropriated funds to paving the SFSR Road. The Forest Service may not redirect those funds elsewhere. This analysis focuses on how best to reduce sediment from the SFSR Road while meeting congressional direction to pave the road and court direction to not prevent winter access and snow plowing pending the decisions to be made in this FEIS.

223 The Forest Service does not intend to plow snow from the SFSR Road. Others may plow snow in accordance with Forest Service specifications and guidelines. Snow removal on Johnson Creek Road is outside the scope of this analysis.

224 The preferred alternative (RA) severely restricts commercial and noncommercial transport of toxic materials on the SFSR Road. See response to Comment 2 and Appendix E.

225 The hazard of erosion and potential sediment production from the Warm Lake fire complex is analyzed in the Warm Lake Fire Complex Fire Recovery EIS and is included in the cumulative effects analysis in this FEIS. See responses to Comments 29, 36 and 72.

Distribution List for Final Environmental Impact Statement and Record of Decision

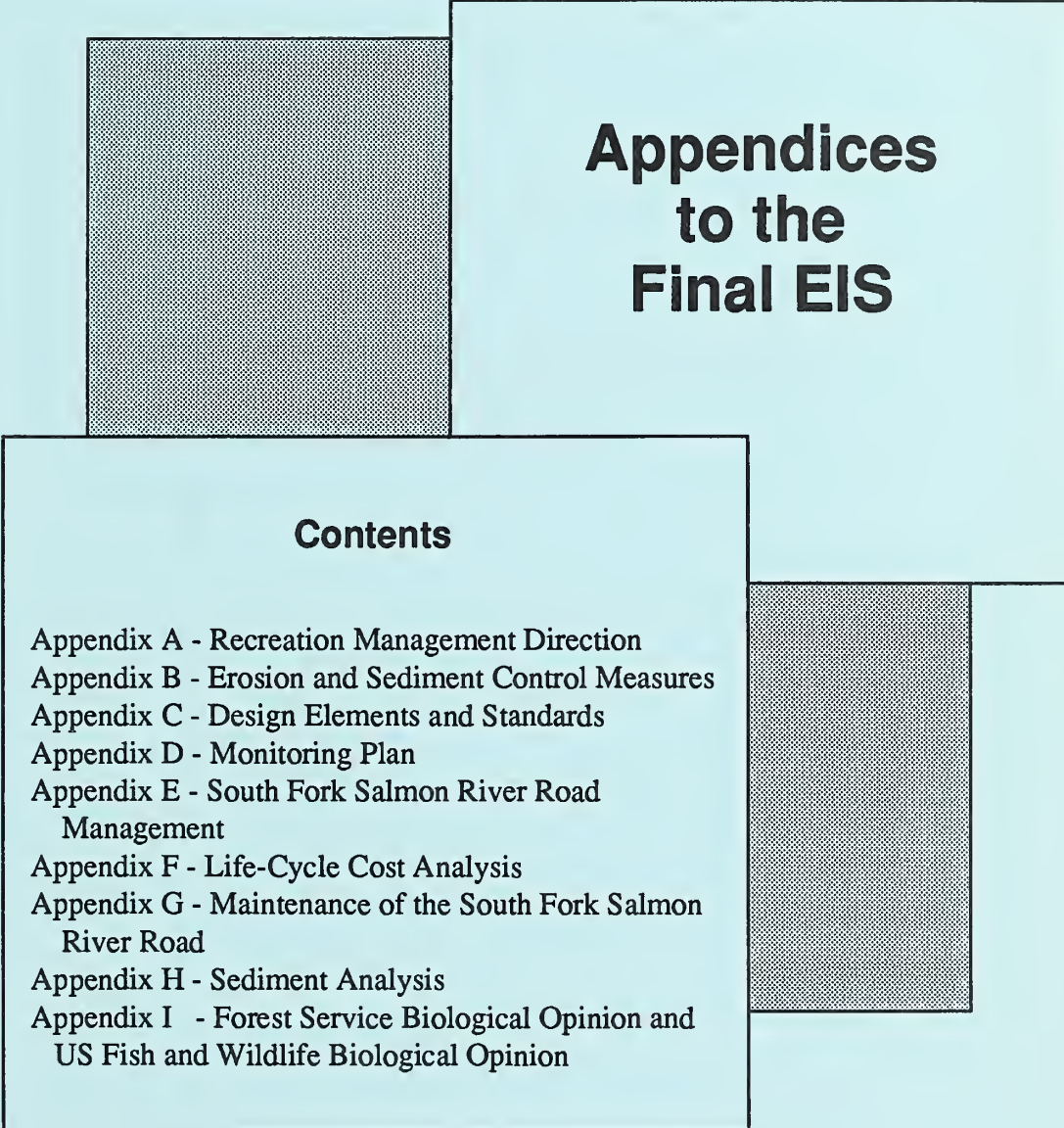
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& Experiment Station	Boise/Payette Backcountry Coalition
Rodman N. Barker	Kurt Flynn
American Legion	Federal Energy Regulatory Commission
Robert G. Benedetti, M.D.	Stacy Gebhards
Allen Bent	Idaho Department of Fish
Dave Bivens	and Game
Idaho Farm Bureau Federation	Craig Gerke
Boise National Forest	The Wilderness Society
Stanley Boyd	Jay Gore
Idaho Wool Growers Association	U.S. Fish & Wildlife Service
Ernest Bratley	William G. Graham, Manager
Robert P. Brechinridge	Northern Basins Section
Idaho National Engineering	Water Planning Bureau
Laboratory	Ms. Liz Greenhagen
Warren Brown	Tom Grote
Andy Brunelle	Star News
State of Idaho	Peter Grubb
Office of the Governor	River Odysseys West
Howard Buettgenbach	Stanley F. Hamilton, Director
Elbert Bunch	Idaho Department of Lands
Payette Lakes Wildlife Federation	John Hanson
Bette Carlson	Vern Harder
Cascade Library	J. Bud Harp
Tom Cassidy	Harp Oil Co.
American Rivers	Ronald Harrington
Cliff Chambers	Larry and Janet Harshfield
Don Chapman	Adolf Heinrich
Garn Christensen	Valley County Commissioner
Mackay Bar Corp.	Anne Heissenbittel
Adena Cook, Public Lands Director	National Forest Products Association
Blue Ribbon Coalition, Inc	Federal Forest Planner
Jeffrey Cook	Robert Hitchcock
Wallace N. Cory	Evergreen Forest Products
Lafe and Emma Cox	J. Charles Holden
Congressman Larry E. Craig	Executive Director,
Missy Guisto	Idaho Association of Counties

The Public's Involvement

David L. Hook	William R. Meiners
Director, Environmental Affairs	Chairman of the Board
United Four-Wheel Drive Association	Idaho Outfitters and Guides
Carl E. Hopt	Licensing Board
Humbolt National Forest	Dr. Carl M. Melina, M.D.
Forest Planner	Tom Menton
Lissa Hummel	Scott Mernitz
Idaho State Auto Association	Camp, Dresser, and McKee
Idaho Mining Association	Merl Mews
Dave Imel	Idaho Department of Parks & Recreation
Scott Imus	Don and Dorothy Millen
Mariah Association, Inc.	Ms. Doris Milner
J. Jensen, Daines & Moore	Robert Newcomer
Ned Jackson	NOAA Fisheries
Idaho State Parks	U.S. Department of Commerce
Ponderosa State Park	Dr. Herald S. Nokes
Ed Javorka	W. Hugh O'Riordan
Gerald A. Jayne	Evergreen Forest Products
Donald B. Jensen, President	Anne Marie Oberly
Associated Logging Contractors	Coeur-Thunder Mountain, Inc.
Bryan Johnson	James Osborn, MD
Craig Johnson	William R. Osebold
U.S. Bureau of Land Management	Lawrence A. Papp
James J. Johnston	Jack Pickell
Donna Jones	Dennis D. Pierce
Jack Kangas	McCall Chamber of Commerce
Don Keller	Paul A. Pierce
Larry Kidd	U.S. Bureau of Mines,
Bill Kirk	Section of Mineral Involvement
Paul Kucera	Western Field Operation Center
Department of Fisheries	Pioneer Mining Co.
Nez Perce Tribe	Tom Pomeroy
John Kwader	Hildegard Raeber
Keith Lambrecht	Chris Randolph
Cliff Lee	Fish Biologist,
Bob Lesser	Idaho Power Co.
Idaho Whitewater Association	Alan Reynolds
John Lewinski	Blaine County Commissioner
Shirley Lindstrom	D.I. Rising
Dick Linford	Hadley B. Roberts
Echo: The Wilderness Co.	Mark A. Robinson
Alma Longstroth	Whayne Supply Co., Inc.
John Loomis	Noel Routson
Div. of Environmental Studies	Joe Sacawa
University California, Davis	Mitch Sanchotena
Dean A. Lydig	Idaho Steelhead & Salmon Unlimited
Charles Mabbott	Mike Schlegal
Dan Magers	Idaho Department of Fish and Game
Donald Martin	James D. Sears
U.S. Environmental Protection Agency	Secesh Meadows Property Owners Assn.
Dr. Ralph Maughan, PH.D.	Daniel Semler
McCall Public Library	Sho-Ban Tribe
David A. McClintock	Shoshone-Paiute Tribes
	T.E.R.O.

Chapter VI

Mark A. Sigrist	Representative Gayle Wilde
Perry Silver	Ron Wise
Silver King Mines, Inc.	Dennis Wyatt
David Simmonds	
Public Lands Task Force	
McCall Chapter	
Idaho Conservation League	
Rod Smith, Assignment Editor	
KBCI-2	
Dale A. Stirling	
Heritage North	
Glen Stout	
Stout Logging	
Steven Stuebner	
Idaho Statesman	
John R. Swanson	
Senator Steven D. Symms	
Targhee National Forest	
Forest Planner	
Captain Tom L. Taylor	
Ada County Sheriff	
Tracey Trent	
Idaho Department of Fish & Game	
U.S. Attorney	
District of Idaho	
U.S. Bureau of Land Management	
Oregon State Office	
Waterpower Classification Staff (946)	
U.S. Bureau of Land Management	
Planning Coordinator	
Boise District	
Cutler Umbach	
University of Idaho	
Social Science Library	
Valley County Commissioners	
Dave Van De Graaff	
Boise Cascade Corp.	
Ronald K. Vaughn	
The Flying W	
Leo Walton	
Jim Weber	
Columbia River Inter-Tribal	
Fish Commission	
Charles Wellner	
Western Forest Industries Assn.	
Ken Weyers	
Weyers Consulting	
Winston Wiggins	
Idaho Department of Lands	
Karen Wilbur	
Idaho Department of	
Health and Welfare	



Appendices to the Final EIS

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Appendix A

Recreation Management Direction

Appendix A

Recreation Management Direction

Introduction

The direction for recreation management for the South Fork Road on the Cascade Ranger District (Boise National Forest) and Krassel Ranger District (Payette National Forest) is outlined for the preferred alternative (Alternative RA). The regulations, facilities, and attractions in the drainage are included for each district. Some items, such as trail construction, campground improvements, or other recreational facility developments, are not included in this project. The items listed below would be needed now or some time in the near future to accommodate the predicted recreation growth. Only some items listed would be included in the preferred alternative, depending on the amount of funding available (The priority for funding is a reduction of sediment). At a minimum, parking areas would be designated, and information and regulatory signs would be posted.

Direction for Cascade Ranger District on the Boise National Forest

The direction will provide a variety of roaded recreation experiences, while protecting resources and user safety. Vehicle parking will be RESTRICTED to designated (and prepared) areas. Vehicle travel will be restricted to designated routes. Camping and day-use activities may occur without restriction - **except for parking in designated areas** - until such a time that conditions warrant a change in management strategy. Immediate control will be in the form of restricting parking to designated areas.

As appropriate by current (or projected) user needs and site characteristics, provisions will be made for--

1. Overnite parking areas (with limited facilities), with the potential for nearby dispersed camping, available for day use also. Also provide for long term parking near trails.

2. Day use or short term parking only - this would include interpretative stops, picnic areas, day parking for fishing.... generally without permanent facilities, with no accommodations for overnite stays.

Parking of unattended vehicles in any other location other than at one of the sites developed and designated as above, will be prohibited. In general parking would be provided every 1/2 to 1 mile where it can reasonably and safely be provided without creating any new cuts or fills. These parking areas will be designed for 2 - 10 vehicles as appropriate, with some type of surfacing and controls to ensure vehicles remain in the designated parking area. These parking areas will given the greatest possible spacing from the road way itself, and be clearly designated to avoid confusion between safety turnouts along the road with the parking areas. It is important to retain a distinction between parking areas and pullouts.

More site specific direction is contained in the Boise National Forest road log which follows. This is direction for immediate implementation, or as noted may be programmed for out year accomplishment. The Boise NF facilities - attractions log of the South Fork of the Salmon River Road is measured from the junction of Forest Highway 22 and the Knox Road #401.

0.0 mi On the east and west side of FH 22, information sign:

SOUTH FORK SALMON RIVER ROAD (with directional arrow)
KRASSEL RANGER STATION XX MI.
YELLOW PINE XX MI.

0.05 On east side, regulatory sign:

SPEED LIMIT XXMPH

0.075 On east side, information and caution sign (length of message may necessitate more than one sign):

NARROW WINDING ROAD WITH BLIND CURVES AND STEEP GRADES NEXT XX
MILES. TURNOUTS PROVIDED FOR PASSING ONCOMING TRAFFIC. PARK IN
DESIGNATED PARKING AREAS ONLY. PLEASE DRIVE WITH CAUTION.

0.1 Construct surfaced approach to west for dispersed camp site.

0.15 Information sign where road crosses:

CABIN CREEK

0.3 Information Sign: KNOX RANCH

Construct surfaced approach to Knox Ranch on east side.

Construct surfaced parking area on west side to accommodate 6-8 cars.

Regulatory Sign: DESIGNATED PARKING AREA (visible for both north
and southbound traffic).

0.45 Construct surfaced approach (Pioneer Road) on west side for access to Cabin Creek dispersed area. Construct approximately 1/2 mile of gravel surfaced road with proper drainage and pipe to access trailhead where existing SFSR road will be converted to a trail. This road will be constructed in such a manner as to provide for ingress and egress to adjacent dispersed campsites in the flat area. Provide adequate surfaced parking area near the high ground west of sta. 29 + 00 for 8-10 vehicles.

Information Kiosk will be located at trailhead.

0.65 Construct surfaced approach on east side for Road #467

Information sign: double sided--CABIN CREEK ROAD
THUNDERBOLT LOOKOUT

3.5 Construct surfaced approach on east side for 401A road.

3.55 Construct Designated Parking Area for 3-5 cars.

Regulatory sign: DESIGNATED PARKING AREA (visible for both north and southbound traffic).

3.9 Construct surfaced approach for local road on west side.

4.1 Construct surfaced approach for local road on east side.

4.5 Construct surfaced approach on east side for 401C road.

5.0 Information sign where road crosses: DIME CREEK

5.5 Information sign where road crosses: NICKEL CREEK

5.71 Construct surfaced approach on west side for local road.

5.81 Construct surfaced approach on east side for 474A road.

6.61 Information sign where road crosses: HAYES CREEK

6.71 Construct surfaced approach on west side for 495 road.

Information sign for three way traffic flow:

southbound: FOREST HIGHWAY 22 (arrow straight up)
DOLLAR CREEK ROAD NO. 495 (arrow right)

northbound: DOLLAR CREEK ROAD NO. 495 (arrow left)
McCALL XX MI. (arrow up)
YELLOWPINE XX MI. (" ")
KRASSEL RANGER STATION XX MI. (" ")

from 495: KRASSEL (arrow left) XX MI.
McCALL (arrow left) XX MI.
YELLOWPINE (arrow left) XX MI.
FOREST HIGHWAY 22 (arrow right) XX MI.

6.91 Information sign where road crosses: HAYES CREEK

6.96 Information sign @ Dollar Cr. confluence on west side of SFSR:

DOLLAR CREEK

Construct a Designated Parking Area for 3-5 cars.

Regulatory sign: DESIGNATED PARKING AREA (visible for both north and southbound traffic).

7.66 Information sign where road crosses: MIRROR CREEK

8.11 Construct a Designated Parking Area for 3-5 cars.

Regulatory sign: DESIGNATED PARKING AREA (visible for both north and southbound traffic).

- 8.61 Construct a Designated Parking Area for 3-5 cars.

Regulatory sign: DESIGNATED PARKING AREA (visible for both north and southbound traffic).

- 9.11 Construct a designated Parking Area for 3-5 cars.

Regulatory sign: DESIGNATED PARKING AREA (visible for both north and southbound traffic).

- 9.12 Information sign where road crosses: ROARING CREEK

- 9.22 Construct surfaced approach on east side for 474E road.

- 9.62 Information sign @ Forest Boundary:

ENTERING PAYETTE NATIONAL FOREST (for northbound traffic)

ENTERING BOISE NATIONAL FOREST (for southbound traffic)

Direction for the Krassel Ranger District on the Payette National Forest

Direction will provide a variety of roaded recreation experiences, while providing maximum resource protection. Vehicle parking will be RESTRICTED to designated (and prepared) areas. Vehicle travel will be restricted to designated routes. Camping and day use activities may occur without restriction - **except for parking in designated areas** - until such a time that conditions would warrant such a change in management strategy. Immediate control will be in the form of restricting parking to designated areas.

As deemed appropriate by current (or projected) user needs and site characteristics, provision will be made for:

1. Full Service Campgrounds (existing = Buckhorn, projected high priority = Poverty Flats, projected long term, Camp Creek [either at an upper location east of Reed Ranch or the lower area along the road]).

2. Overnite Parking areas - with limited facilities, with the potential for nearby dispersed camping, available for day use also. Also provide for long term parking near trails.

3. Day use or short term parking only - this would include interpretative stops, picnic areas, day parking for fishing.... generally without permanent facilities, with no accommodations for overnite stays.

Parking of unattended vehicles in any other location other than at one of the sites developed and designated as above, will be prohibited. In general parking would be provided every 1/2 to 1 mile where it can reasonably and safely be provided without creating any new cuts or fills. These parking areas will be designed for 2 - 10 vehicles as appropriate, with some type of surfacing and controls to ensure vehicles remain in the designated parking area. These parking areas will given the greatest possible spacing from the road way itself, and be clearly designated to avoid confusion between safety pullouts along the road with the parking areas. It is important to retain a distinction between parking areas and pullouts.

More site specific direction is contained in the Payette National Forest road log which follows. This is direction for immediate implementation, or as noted may be programmed for out year accomplishment. The Payette NF facilities - attractions log of the South Fork of the Salmon River Road is measured from the Boise NF boundary.

.5mi (8.7mp) GOAT CR. - based on preferred alternative (no bypass) there would be no action at this location.

1.0mi (9.2mp) current trail (connects with Goat Cr. trail) on east was initially proposed for conversion into main road. If the road location is retained in its current location a small (2 - 5 vehicles) parking area will be provided in this immediate area to accommodate use on this trail.

1.35mi (9.55mp) Road counter # 40 on West Carsonite marker.

- 2.0mi (10.2mp) N. TWIN CREEK on East
 - 2.3mi (10.5mp) Turnout - use area as interp. site for Poverty burn - short term parking.
 - 2.8mi 11 Milepost on West
 - 3.2mi (11.4mp) SNOWSLIDE CREEK on East
 - 3.6mi (11.8mp) CLIFF CREEK view point across drainage to West - no development
 - 3.7mi (11.9mp) BEARHILL CREEK on East
 - 3.75mi 12 Milepost on West
 - 4.6mi (12.85mp) SILVER CREEK on West
 - 4.8mi 13 Mileposts on East & West
 - 5.6mi (13.8mp) Some limited past uses - no action.
 - 5.8mi 14 Milepost on East
 - 5.85mi (14.05mp) BLACKMARE CREEK
 - 6.2mi (14.4mp) Poverty Flat Dispersed Area & TH (w/toilets) on West. Immediate action to stabilize roads - surfacing will be done in conjunction with the improvement of the main road. A loop road will be constructed and parking areas provided - both for camping use and as a trail head facility. Ultimately the "loop" will be converted into a full service campground. Survey, design and construction of the "loop" will be adequate for future conversion into a 15 unit campground.
- Some of the currently existing roads, on the flood plain or close to the River will be closed concurrently with construction and surfacing of a new "loop". This location would be used for camping, trail head parking and interpretation.
- Improvement activities at this site will have high priority, and are intended to mitigate the anticipated impacts that will result from the increase use generated by the road improvements.
- 6.3mi (14.5mp) Prevention Sign on East (sign #2)
 - 7.8mi (16.0mp) Hotsprings on West - provide short term "Hot Springs parking" upstream. Improve trail to pool - provide for patrol and cleanup (mtnc.).
 - 8.8mi (16.95mp) Indistinct road to dispersed area on West - close.
 - 8.85mi 17 Milepost on West
 - 9.1mi (17.25mp) Four Mile Creek Dispersed Area (with: two toilets & one battered fireplace, and a plank stream crossing in lower area) on West - provide parking, remove one toilet - use for trail head and limited camping.

Work at this location to provide controlled and surfaced parking is second priority (secondary to Poverty). Site will provide camping, trailhead and short term parking.

- 9.15mi (17.3mp) FOUR MILE CREEK on East
- 10.7mi (17.85mp) Road to "Lodgepole" dispersed area - close and rehab this road - provide limited parking at 11.0 mile.
- 10.85mi 18 Milepost (and binwall)
- 11.0mi (18.15mp) road to dispersed area on West - develop a small parking area.
- 11.1mi (18.25mp) dispersed area on West - closure due to proximity to River.
- 11.35mi (18.5mp) Squatters Cabin ("Darling") on West - provide for future parking and public recreation use when occupancy is resolved.
- 11.4mi (18.55mp) Nasty Creek - USGS BM - on East S of creek
- 11.5mi 19 Milepost
- 12.3mi (19.45mp) EAGLE ROCK TRAIL & Big Game Habitat Sign on East - small parking area. (Option to combine into a little more complex development if Reed Ranch ownership changes, (eg outhouse facility, perhaps in conjunction with airstrip)
- 12.45mi 20 Milepost on West also just to the North is a road to a dispersed area on West - no action, dictated by ownership of Reed Ranch
- 12.7mi (20.25mp) road to Reed Ranch Dispersed area (also at 12.85mi) on East - no action, dictated by ownership of Reed Ranch
- 12.9mi (20.45mp) Windsock and road to airstrip on West
- 13.1mi (20.65mp) CAMP CREEK on East
- 13.2mi (20.75mp) road to Camp Creek Dispersed (South entrance) Site
- 13.25mi (20.8mp) road to " " " (North ") " on West
- Development of parking and /or camping area at the current "Camp Creek dispersed area. Provide a small parking / overnite area to accomodate trail use with potential for future expansion. Priority #4
- 13.35mi (20.9mp) PHOEBE MDW. TRAIL
- 13.4mi 21 milepost on West
- 13.9mi (21.5mp) PHOEBE CREEK on East - timbersale road goes up creek...on East - provide parking area for Jakie Creek trail use.
- 13.95mi (21.55mp) Jakie Creek Road Bridge on West
- JAKIE CREEK ROAD - management as determined by Forest Plan
- 14.4mi 22 Milepost on West

- 14.9mi (22.5mp) HotSprings pools (of sorts) on edge of river to West
- 15.5mi 23 Milepost on West
- 15.8mi (23.3mp) road to Dispersed area on East - recommend closure
- 16.1mi (23.6mp) Buckhorn Creek Bridge on West

BUCKHORN ROAD (5.5 miles) & Teapot which spurs from Buckhorn Road - management as determined by Forest Plan

- 16.45mi 24 Milepost on West
- 17.2mi (24.75mp) BUCKHORN BAR CREEK on East
- 17.4mi (24.95mp) BUCKHORN BAR CAMPGROUND - south sign
- 17.45mi (25mp!) Buckhorn Bar Campground - Upper Loop - entrance on East
- " Buckhorn Bar Waterstop on East - short term parking
- " Buckhorn Bar Campground - River Loop - entrance on West
- 17.55mi 25 Milepost on East
- 17.7mi (25.15mp) Buckhorn Bar Campground - Teepee Loop- entrance on West
- 17.75mi (25.2mp) BUCKHORN BAR CAMPGROUND - north sign
- 17.85mi (25.3mp) road to timber sale area above Campground on East - keep closed
- 18.85mi (26.3mp) road to Salmon Point dispersed area on West - close road to flood plain flat and provide parking along side the road "on top"

This action is proably #4 priority.

- 18.9mi 26 Milepost on West
- 19.8mi (26.9mp) WILDCAT CREEK on East
- 19.95mi 27 Milepost on West
- 20.4mi (27.45mp) LITTLE INDIAN CREEK on East
- 20.65mi (27.7mp) INDIAN RIDGE TRAIL on East
- 20.85mi (27.9mp) NORTH BUCKHORN TRAIL TH and Bridge on West
- KRASSEL WORK STATION on East

Provide a parking area for trail users of above two trails - no over nite camping.

Number four in priority.

- 21.1mi 28 Milepost on West
- 21.6mi (28.5mp) KRASSEL CREEK on East
- 21.65mi (28.55mp) Back road to "upper level" Krassel Work Center on East

21.8mi (28.7mp) Krassel Hole - Single toilet on East - provide for short term parking

21.95mi 29 Milepost on West

22.2mi (29.25mp) Gaging Station and Cableway on West - provide short term parking

22.3mi (29.35mp) "GLORY HOLE" on West

22.95mi 30 Milepost on West

23.3mi (30.35mp) FITSUM CREEK across river (also 45th Parallel crosses the road in this area)

24.35mi Road counter # 39C on West.

0.05 On west side, regulatory sign:

SPEED LIMIT XXMPH

0.075 On west side, information and caution sign (length of message may necessitate more than one sign):

NARROW WINDING ROAD WITH BLIND CURVES AND STEEP GRADES NEXT XX MILES. TURNOUTS PROVIDED FOR PASSING ONCOMING TRAFFIC. PARK IN DESIGNATED PARKING AREAS ONLY. PLEASE DRIVE WITH CAUTION.

24.4mi (31.45mp) Junction with Lick CR and East Fork South Fork Salmon River Roads, traffic island.

Indian Point - near E FK & S Fk confluence and south of bridge - limited camping - improve road surface and parking opportunities. Construct Kiosk for information.

East Fork Road

On the east and west side of the East Fork Road before the junction with the South Fork Road, information sign:

SOUTH FORK SALMON RIVER ROAD (with directional arrow)
KRASSEL RANGER STATION XX MI.
WARM LAKE ROAD XX MI.



Appendix B

Erosion and Sediment Control Measures

Appendix B

Erosion and Sedimentation Control

The greatest potential for erosion and sedimentation production during construction will be during thunderstorms and from the removal of culverts with running water. The risk comes from thunderstorms developing during excavation of cut slopes, placing of fill material, or during the removal of a culvert.

The following construction activities are anticipated on the South Fork Road and the Knox by-pass:

- A. Excavation of the existing road surface.
- B. Raising the road grade by bringing in fill material.
- C. Excavation of some existing cut slopes.
- D. Creating new cut slopes - associated with the Knox by-pass.
- E. Excavation of some areas to install retaining structures.
- F. Removal and/or new installation of some ditch relief culverts. Others would have the inlets sealed watertight.
- G. Removal and installation of new cross drainage structures. What is not currently known is the exact location of all of these activities. This will not be known until the design process is completed.

The contractor will be required to control sediment with various types of treatment. Each type of treatment would be site specific, in most cases, as to the proximity to streams and the South Fork River, steepness of terrain, stream gradient, road gradient, etc. Generally, all cut and fill slopes will receive some type of stabilization treatment and/or revegetation.

Types of erosion and sediment control for the various construction activities may include, but by no means be limited to, some of the following:

- A. Excavation of the existing road surface.
 - 1. Unsuitable excavated material will be hauled to designated disposal sites and not bladed over the fill slope.
 - 2. Drainage ditches will be installed with 3:1 to 4:1 slopes.
 - 3. Check dams and sediment traps will be installed in the ditchline and in front of culvert inlets.
 - 4. Water encountered during excavation will be immediately diverted to the drainage ditches.
 - 5. Silt fences and/or straw bales will be installed in designated areas prior to construction activities.
 - 6. All drainage ditches and culverts will be installed along with the excavation process.
 - 7. All unfinished areas will be properly secured, to the Contracting Officer Representative's approval, to prevent erosion during weekend shutdown.
 - 8. All embankment areas will be compacted to the required specifications prior to moving to another section. This does not mean that the contractor cannot have crews in several locations.
 - 9. All excavations will be to the proper grade, with appropriate ditchlines installed, culverts installed, asphalt placed, and to any other requirements specified prior to winter shutdown.

10. All silt fences, sediment traps, etc., will be monitored and maintained by the contractor at all times until completion of the project.

B. Raising the road grade by bringing in fill material.

1. All silt fences, straw bales and other specified erosion control measures will be installed as specified prior to beginning construction,
2. Fill slopes will be designed and compacted rather than slough widening.
3. Silt fences would be inspected and maintained by removing sediment as required.
4. If sediment is accumulating at a high rate due to numerous storms, a backup fence would be installed 15 feet downhill from the first. Straw bales may also be required.
5. Sediment traps would be installed at the culvert inlet.
6. Cross drain ditches would be installed as needed.
7. All fill areas would be secured prior to leaving the area for the weekend. This could include utilization of revetment, jute matting, geotextiles, etc. as temporary measures.
8. Fill will be compacted to specifications and brought to proper grade prior to moving onto another portion of the project.
9. Upon completion of the fill slope, it will be revegetated, mulched, fertilized, etc., as specified.
10. All silt fences, sediment traps will be monitored and maintained by the contractor at all times until completion of the project.

C. Excavation of some existing cut slopes.

Generally, there is a lot that could be done to improve some of the existing cut slope stability problems. One example would be to round some of the oversteepened brows that exist in numerous areas. However, under current direction this is not feasible. Excavation of cut slopes would be limited to the following situation:

1. Use of soil bio-engineering techniques - excavation could be non-existent to heavy depending on the type of treatment selected. Types of treatment include but are not limited to:
 - a. Wooden slope grating
 - would involve hauling in fill material
 - fill material used in filling wooden structure
 - b. Wattle
 - minimal ground disturbance from excavation
 - c. Cordon construction
 - moderate excavation while establishing terraces to install vegetation
 - d. Slope facines
 - moderate excavation of ditches in order to plant woody plants
 - e. Hedge layer construction
 - moderate excavation of small terraces or berms in order to plant woody vegetation
 - f. Brush layering
 - heavy excavation and fill in order to plant woody vegetation in layers approximately ten feet apart vertically
 - g. Living crib wall
 - heavy excavation to establish room to install crib wall
 - h. Live staking
 - no excavation required

2. Conventional engineering methods. Numerous possibilities exist to stabilize cut and fill slopes. The following retaining structures may be utilized for potential areas requiring stabilization. Exact locations have yet to be determined.

- a. Wood walls
- b. Crib walls - concrete
- c. Gabions
- d. Anchored concrete walls
- e. Mechanically stabilized embankment walls
- f. Cellular precast concrete walls

In addition to retaining walls, horizontal well screens would be installed in wet locations to de-water the area.

The slopes behind the retaining walls would be revegetated.

3. Erosion and sediment control measures.

- a. All silt fences, straw bales and other specified erosion control measures will be installed as specified prior to beginning any construction activities.
- b. Sediment traps and check dams would be installed ahead of culverts and in ditchlines, respectively.
- c. Water encountered during excavation would be immediately diverted in such a manner as not to cause erosion.
- d. All unfinished areas will be properly secured, to the Contracting Officer Representative's approval, to prevent erosion during weekend shutdown. This could include revetment, matting, geotextiles, temporary ditches, brush layers, etc. as temporary measures.
- e. All silt fences, sediment traps, etc. will be monitored and maintained by the contractor at all times until completion of the project.
- f. Cut slope revegetation could require irrigation in some locations in order to get a rapid growth established.

D. Creating new cut slopes

- 1. As of now, this could occur in two locations on the Knox by-pass. Both locations would require relatively small cuts (10 feet or less).
- 2. All erosion and sediment control measures as described under item C would be incorporated in these areas.

E. Excavation of some existing fill slopes.

- 1. There are several areas along the South Fork Road where the fill slope has failed. These areas are difficult to pinpoint on a map. These areas are adjacent to the river. Retaining structures are required to stabilize the areas and to prevent further degradation of the area.
- 2. All erosion and sediment control measures as described in item C would be incorporated in these areas.
- 3. One additional sediment control measure that might be utilized would be the use of a diaper (which is a kind of floating silt fence with the bottom of the fence anchored to the bottom of the stream channel) in the South Fork River to contain any sediment that might be transported during storm activities.

F. Removal and/or new installation of ditch relief culverts.

1. Existing culverts not required would be removed or have the inlet ends sealed water tight rather than being removed, depending on the amount of excavation required.
2. All erosion and sediment control measures as described earlier would be incorporated during this phase of construction.
3. No culvert removal would be allowed during thunderstorms or during the threat of a potential thunderstorm.

G. Removal and installation of new cross drainage structures.

1. This will be more difficult to do as these will have running water.
2. In addition to the erosion and sediment control measures utilized earlier, the following would be installed:
 - a. A minimum of three settling ponds would be established in the stream depending on the gradient and volume of flow.
 - b. Temporary by-passes would be used where possible.
 - c. Temporary dams and pumping may be required.
 - d. Diapers would be installed in the South Fork of the Salmon River.
3. Inlets and outlets would be properly designed to prevent scour of the stream channel and to allow fish passage in these areas where required.
4. Riprap would be utilized in downstream sections of the channel where velocities are high.
5. Headwalls would be utilized on major installations.

As the design process is completed, more detailed information as to erosion and sediment control measures would be available for review. Every effort will be made to keep short term sediment production to a minimum. Erosion and sediment control measures will be a separate bid item which will encourage the contractor to comply with the plans and specifications. The Contracting Officer Representative will be kept advised as to the success of various measures by personnel performing the monitoring and inspections. If deficiencies are discovered he would be immediately notified so he can have the contractor make the necessary adjustments.

Appendix C

**Design Elements
and Standards**

Appendix C

Design Elements and Standards

I. Road Structure

A. Road Bed

1. Traveled Way-

- a. 12 ft. single lane road.
- b. Design vehicle will be a lowboy.
- c. Will be designed to State load limits.

2. Shoulder width-

- a. Minimum of one foot wide.
- b. Parking areas will be prepared where feasible for recreation access.

3. Turnouts-

- a. Spacing will not exceed 1000 feet.
- b. Locations will be at stable existing locations.
- c. Widths will vary, as will the lengths. Maximum width will be 10 feet. Maximum length will be lowboy plus 50 feet transition at each end.

4. Turnarounds-

This is extremely limited but could be constructed where appropriate and where sufficient room exists.

5. Curve widening-

- a. Will consider a lowboy as the design vehicle.
- b. Will be considered where safety can be improved.

6. Clearance-

Clearance does not appear to be a problem except for the binwall.

7. Slough widening-

Slough widening will not be done.

8. Clearing widths-

- a. Clearing will be limited to removing vegetation on cut slopes encroaching the road bed.
- b. Clearing will be considered on fill slopes for improvement of visibility.

- c. Clearing of trees with exposed root systems will be done on cut slopes.
- d. Clearing will be limited to thinning of trees where growth is too thick to facilitate snow removal.

9. Daylighting or gradeouts-

Removal of existing hogbacks will be considered where reduction of sediment production can be improved.

B. Speed and Sight Distance

1. Design Speed-

Will be determined after other elements are designed. The road will not be designed for a specific speed.

2. Sight Distance-

a. Sight distance will be improved where feasible with little disturbance to existing cut slopes.

b. Where improvement can be made to vertical curves, this will be undertaken provided there are benefits to road drainage and sediment reduction.

3. Stopping Sight Distance-

Stopping sight distance will be considered in relationship to other criteria.

II. Alignment

A. Horizontal Alignment-

1. The alignment of the road will remain approximately the same as present.

2. Superelevations will be designed into the traveled way except where drainage problems occur.

B. Vertical Alignment-

All grades will remain approximately the same as present. Some adjustments may be necessary for runoff or sediment reduction.

III. Guardrails

A. Factors to Consider:

- 1. Accident experience - been limited to date
- 2. Road objectives
- 3. Functional classification
- 4. Design speed
- 5. Traffic volume and type
- 6. Roadway cross section

7. Height of embankment
8. Steepness of fill slope
9. Horizontal curvature
10. Gradient
11. Roadside conditions
12. Climatic conditions
13. Cost effectiveness

IV. Roadway Drainage

A. Surface treatments to be considered-

1. Gravel
 - a. 3% insloped road(maximum)
 - b. driveable shallow gravelled ditch
 - c. cross drains to drain ditches
2. Asphalt-
 - a. 2% outsloped road (maximum)
 - b. Use of drainage troughs

B. Subsurface-

1. Spring areas will be properly treated with drainage structures installed to keep water from the road bed.
2. Drainage will be installed where appropriate to drain water from the subgrade.

C. Culverts (cross drains in road and drainages)-

1. Streams where fish passage is required will be designed for efficient passage.
2. Inlets will be properly designed to be hydraulically efficient and armored.
3. Outlets will be designed to prevent erosion.
4. Culverts will be installed at proper grades to prevent icing up in the winter.

V. Erosion Control and Watershed Protection

A. Control Measures

(See Erosion and Sedimentation Control Considerations For Design and Construction, South Fork Erosion Control, State of Idaho Best Management Practices for Road Activities, and Sedimentation Control Measures)

B. Design-

1. Maximize sediment reduction on all cut and fill slopes.
2. Maximize sediment reduction on the road surface.
3. Insure no new erosion sources are created.

C. Construction-

1. Insure all sediment protection devices are installed prior to actual construction.
2. Insure all erosion control and necessary drainage work is completed prior to winter shut down.

D. Disposal of waste materials-

1. All waste materials will be disposed of in approved locations and properly shaped and seeded.
2. Old culverts will be removed from National Forest land.

E. Retaining Structures-

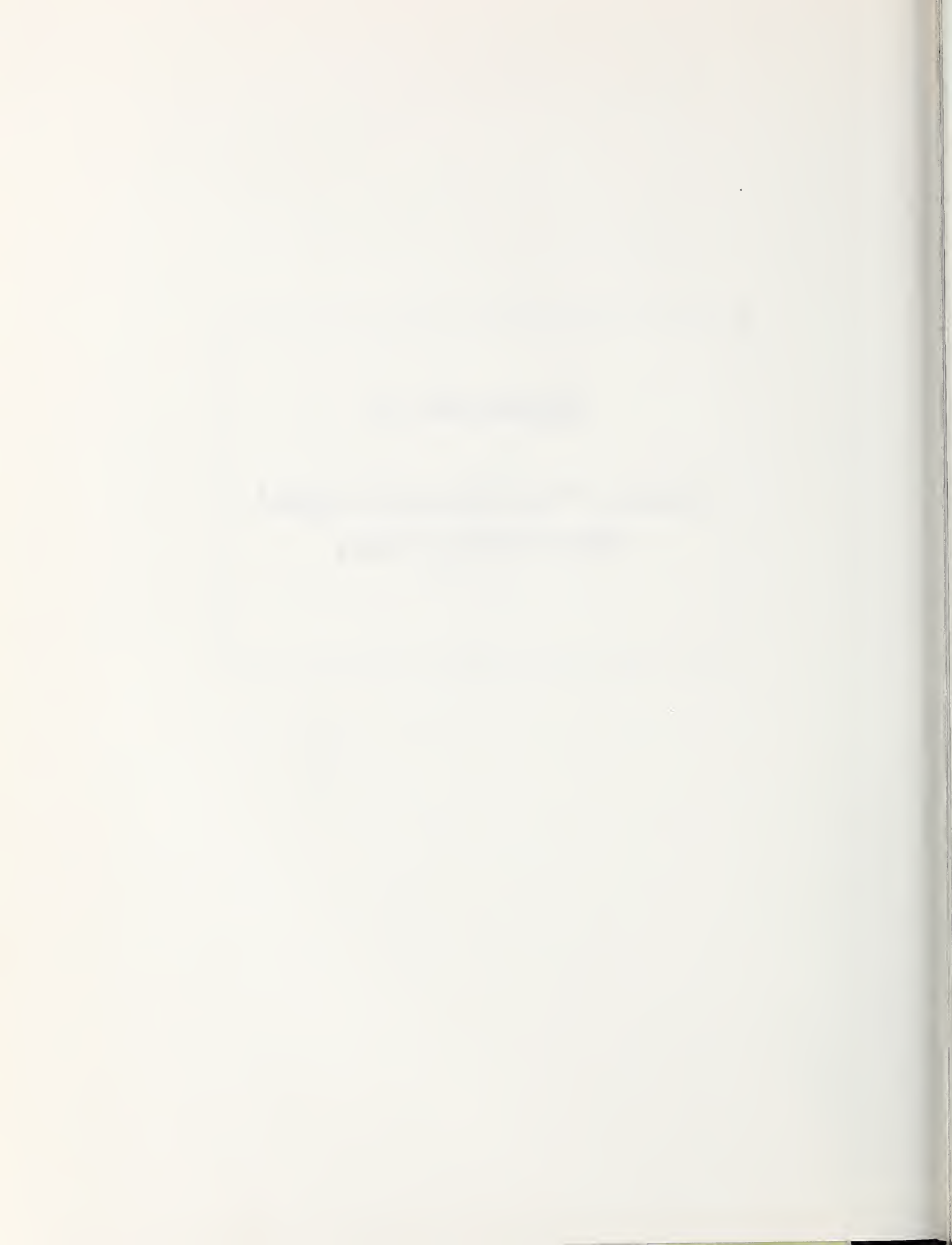
All retaining structures will be designed and installed where needed to control or contain erosion and sediment.

EROSION AND SEDIMENTATION CONTROL CONSIDERATIONS
FOR DESIGN AND CONSTRUCTION

1. Fit the road to the terrain.
2. Time grading and construction to minimize soil exposure.
 - a. Staging construction to minimize the size of exposed areas.
 - b. Timing the grading to coincide with a dry season.
 - c. As soon as grading is complete in one area, seed and mulch the exposed areas.
3. Retain existing vegetation wherever feasible.
4. Vegetate and mulch denuded areas.
5. Divert runoff away from denuded areas.
6. Minimize length and steepness of cut and fill slopes.
 - a. If slope steepness is doubled while other factors are held constant, soil loss potential is increased 2-1/2 times.
 - b. To keep erosive velocities from occurring on long or steep slopes, break-up the slopes with terraces at regular intervals.
7. Keep runoff velocities low.
 - a. If the velocity doubles, the erosive energy quadruples and the water can theoretically move particles 64 times larger by volume.
 - b. Driving a cat up and down a slope creates miniature terraces which slow runoff velocity and provides flat places for vegetation to take hold.
8. Prepare drainage ways and outlets to handle concentrated or increased runoff.
 - a. Crusting of the bare soil surface caused by raindrop impact further augments the runoff.
 - b. To prevent channel erosion from occurring:
 - calculate peak flows and velocities for all drainageways that drain a project site.
 - design drainageways to withstand the peak flows without erosion.
 - select and install lining materials that are appropriate for the peak flows.
 - de-energize concentrated flows at outlets by constructing energy dissipators such as riprap aprons.
9. Trap sediment on site.
10. Inspect and maintain control measures.

Appendix D

South Fork Road Project Monitoring Plan



Appendix D

South Fork Road Project Monitoring Plan

Introduction

The Monitoring Plan outlines activities required to meet State and Federal requirements. The goal of monitoring is to evaluate the activities of the South Fork Road Project to see if they are meeting the objectives outlined in the Forest Plan, if they are protecting or enhancing the beneficial uses of the South Fork Salmon River, and if they are adhering to the specifications in the EIS and construction contract. Three types of monitoring activities will occur:

1) Project Monitoring

Project monitoring is used to evaluate the implementation of specific practices in this project to determine if they were effective in meeting the objectives of sediment reduction. Funds for project monitoring are included in the cost of the project and these activities will occur if the project is implemented.

Project monitoring is comprised of two major components; a) Implementation Monitoring, and b) Effectiveness Monitoring.

A. Implementation Monitoring

The purpose of implementation monitoring is to document whether project plans and prescribed practices are implemented (1) as designed and, (2) in accordance with requirements, standards, and guidelines. The basic question addressed is: "Did we do what we said we were going to do?"

B. Effectiveness Monitoring

The objective of effectiveness monitoring is to determine if mitigation measures and practices were effective in reducing sediment and other impacts as planned, and if they are protecting or enhancing the beneficial uses of the South Fork Salmon River. The intent is to focus on cause and effect relationships between the road project and its effect on wildlife, water quality, stream condition, and fish habitat. The question being asked is: "Did the practice or activity do what we wanted it to do?"

2. Baseline Monitoring

The objective of baseline monitoring is to characterize the existing condition of the wildlife populations, water and fisheries resources, and to serve as indicators of long-term trends. Baseline monitoring activities are not part of this project, but are ongoing activities in the South Fork drainage that will indicate the long-term effects of management in the drainage. Funding is not provided by this project for these activities, and is dependent on outside sources. Consequently, some of these activities might not occur if funding is not available. These activities are outlined in the Forest Plan.

3. Validation Monitoring

The objective of validation monitoring is to determine if standards, criteria, and guidelines are properly defined for the South Fork Salmon River drainage and if predictive relationships are valid to meet Forest Plan goals and objectives. Validation monitoring activities are not part of this project, but are related research activities occurring in the South Fork drainage that will examine relationships between sediment, watershed characteristics and fish. The studies listed here are the South Fork activities that are in progress or planned by the Intermountain Research Station. Funding is not provided by this project for these activities.

Monitoring Table of Contents

The following activities will be used to monitor the effects of the road project.

1. PROJECT MONITORING

- a. Erosion plots on cut slopes.
- b. Channel cross-sections.
- c. Turbidity monitoring during construction.
- d. Fish population studies in selected tributaries.
- e. BMP/SWCP Implementation Monitoring.
- f. BMP/SWCP Photo Effectiveness Monitoring.
- g. South Fork Road Inspection Guide (Implementation/Effectiveness Monitoring).
- h. Channel Substrate Monitoring.
- i. Egg Basket Monitoring (in cooperation with State and Intermountain Research Station).
- j. Archaeological Inventory.
- k. Archaeological Implementation Monitoring.

2. BASELINE MONITORING.

- a. SFSR Fish Habitat Substrate Monitoring.
- b. South Fork Salmon River Gage at Krassel.
- c. South Fork Salmon River Cross-Section Monitoring.
- d. SFSR snorkel counts (Boise National Forest).
- e. SFSR redd counts (Idaho Department of Fish & Game).
- f. Surveillance of gray wolf occurrence (Forest Plan under Gray Wolf, and direction by Fish and Wildlife Service, Biological Opinion).

3. VALIDATION MONITORING

- a. SFSR Sediment Storage on Slopes.
- b. SFSR Channel Sediment Storage Survey.
- c. SFSR Hydrometeorological Monitoring.
- d. SFSR Peak Flow Effects on Armor Layer Development in Spawning Areas.
- e. SFSR Calibration of Salmon Redd Model.
- f. SFSR Tributary Sediment Storage.
- g. SFSR Quantification of Road Erosion.

1. PROJECT MONITORING

a. Erosion Plots on Cut Slopes

Program: Soil and Water

Activity, Practice, or Effect: Project Monitoring for South Fork Road.
Effectiveness of BMP's for erosion control on disturbed slopes.

Project Name: SSFR Road Project Erosion Plots.

Location: Krassel and Cascade Ranger Districts

Objectives: To monitor the effectiveness of erosion control measures on cut and fill slopes on the South Fork Salmon River Road Project.

Parameters: Soil volume moved into plot.

Methodology: Plots will be set up to monitor the movement of soil on cut and fill slopes. The plots will consist of catchment structures on the slope. Soil eroded will be measured and compared to the source area to get a relative erosion rate from the slope.

Frequency: Immediately after initial disturbance by contractors, and from 4 to 10 times the first year after disturbance (especially after a large precipitation event) and 2 to 3 times the following years depending on soil stabilizing rates.

Duration: 5 years

Data Storage: Forest Files / Project Files

Analysis: ID Team Review

Reports: Annual report after data collection

Personnel: Project Hydrologist

b. Channel Cross-Sections

Program: Soil and Water

Activity, Practice, or Effect: Project monitoring: Implementation and effectiveness of BMP's.

Project Name: SFSR Road Project Channel Cross Sections.

Location: Cascade and Krassel Ranger District: Various tributaries of the South Fork Salmon River between Warm Lake Highway and the East Fork of the South Fork Salmon River.

Objectives: To monitor the effectiveness of erosion control structures and BMP's during and after construction.

Parameters: Channel cross sections.

Methodology: Cross sections taken above and below the road: before, during and after construction.

Frequency: Annually before and after. Frequently during construction at each location.

Duration: Five years starting in 1989.

Data Storage: Forest files/Project files.

Analysis: ID Team review.

Reports: Annual written report after seasonal monitoring.

Personnel: Project Hydrologist.

c. Turbidity Monitoring During Construction

Program: Soil and Water

Activity, Practice, or Effect: Project Monitoring, implementation and effectiveness of BMP's.

Project Name: SFSR Road Project Turbidity Monitoring.

Location: Cascade and Krassel Ranger District. Various tributaries of the South Fork Salmon River between Warm Lake Highway and the East Fork of the South Fork Salmon River.

Objectives: To monitor the effectiveness of erosion control structures and BMP's, during and after construction.

Parameters: Turbidity meter.

Methodology: Grab samples.

Frequency: Monthly May - September. More frequently during construction.

Duration: Five years starting in 1990.

Data Storage: Forest files/Project files.

Analysis: ID Team Review.

Reports: Annual written report after seasonal monitoring.

Personnel: Project Hydrologist.

d. Fish Population Studies in Selected Tributaries

Program: Fisheries

Activity, Practice, or Effect: Project Monitoring for South Fork Road; effectiveness of culvert removal and reduction in sediment delivery to major South Fork tributaries. Estimate of salmonid populations in South Fork Salmon River tributaries before and after road improvements.

Project Name: SFSR Road Project Fish Population Studies.

Location: Cascade and Krassel Ranger Districts; Cabin, Dollar, Goat, Blackmare, Fourmile, Camp, and Buckhorn Creeks.

Objectives:

1. To provide baseline estimates of fish populations in South Fork tributaries, and characterize the area affected by the road project.
2. To evaluate the effects of the removal of passage barriers at Cabin and Goat Creeks.
3. To augment research activities and establish empirical data on fish population and sediment relationships.

Parameters: Species identification, total population estimates by tributary, relative abundance of non-salmonids by species, and electrophoretic analysis of westslope cutthroat.

Methodology: To be determined by contractor. Will include all or part: electroshocking, mark and recapture, snorkeling transects. Permanently marked locations will be established at sampling locations.

Frequency: FY 89 and four years after completion of road reconstruction.

Duration: Four years from completion of project.

Data Storage: Report filed at Supervisor's Office.

Analysis: Analysis to be completed by contractor, and reviewed by the ID Team and District Fisheries Biologist.

Reports: Written reports to files for each survey year.

Personnel: Outside contract under direction of Project Fisheries Biologist or Zone Biologist.

e. BMP/SWCP Implementation Monitoring

Program: Fisheries/Soil and Water

Activity, Practice, or Effect: Project Monitoring; Implementation of BMP's and contract specifications during ground-disturbing activities of the South Fork Road Project.

Project Name: SFSR Road Project BMP/SWCP Implementation Monitoring.

Location: Cascade and Krassel Ranger Districts.

Objectives: (1) Monitor compliance with sediment control practices specified in the contract and Environmental Impact Statement.

(2) Evaluate the effectiveness of these practices as they occur, allowing time to stop, modify, or mitigate activities that are creating unacceptable impacts.

(3) Evaluate the effectiveness of specific design elements for drainage and sediment control, allowing time to modify the design.

Parameters: Visual inspections. Erosion problems and non-compliance with guidelines will be reported immediately to the Contracting Officer's representative (COR) to change the procedures or to provide direction to the contractor.

Methodology: On-site visits to observe ground-disturbing activities. Emphasis will be placed on disturbance to steep side slopes and stream crossings.

Frequency: Minimum of 2-3 days per week during construction.

Duration: Until completion of construction activities.

Data Storage: Daily log book will be kept on file.

Analysis: Review by Fisheries Biologist, Hydrologist, and Project Engineer as problems arise. Problems will be reported to COR for correction.

Reports: None, unless design changes are necessary. Design changes will be reported in appropriate format by the COR.

Personnel: South Fork Design Team.

f. BMP/SWCP Photo Effectiveness Monitoring

Program: Fisheries/Soil and Water

Activity, Practice, or Effect: Project Monitoring; Facilities, SFSR Road, Effectiveness of sediment reduction from slope stabilization, road surfacing, drainage structures, and bio-engineering (using vegetation with conventional structural approaches).

Project Name: SFSR Road Project Photo Effectiveness Monitoring.

Location: Cascade and Krassel Districts.

Objectives: (1) Evaluate the effectiveness of specific design elements for drainage and sediment control.

(2) Provide a record of construction activities for evaluation and direction for future application.

Parameters: Photo-points before and after construction at representative locations, and where substantial modifications are planned.

Methodology: Photo-points will be established before construction activities, and photos will be taken periodically. Photos will be evaluated by the ID Team.

Frequency: Variable, depending on the complexity and size of the area in question. As a minimum, all selected sites will be photographed before construction activities, and soon after completion. A monitoring schedule will be developed after the design is completed.

Duration: From commencement of construction activities to 10 years after completion of the project. Monitoring after completion of the project is contingent upon funding.

Data Storage: Photo catalog will be on file at the Supervisor's Office.

Analysis: ID Team review.

Reports: A brief narrative will be included with the photos in the catalog.

Personnel: Project hydrologist and fisheries biologist during the life of the project, and RWSWM Staff after project completion.

g. South Fork Road Inspection

Program: Fisheries

Activity, Practice, or Effect: Project Monitoring, Facilities Coordination.
Annual Road and facilities inspection for the South Fork Road.

Project Name: SFSR Road Inspection (Implementation/Effectiveness Monitoring).

Location: South Fork Road on Cascade and Krassel Districts.

Objectives:

- (1) Document road encroachment on stream channels.
- (2) Document passage barriers at stream crossings.
- (3) Evaluate maintenance practices that affect fish habitat or water quality.
- (4) Provide recommendations for improvements.

Parameters: Visual inspection, photo-documentation, and completion of attached "South Fork Road Inspection Form".

Methodology: Inspections will be made by walking short segments of the road, covering its entire length, and surveying all items listed on the Inspection Form. This will require walking below some fill slopes to view retaining walls and drainage structures. Photographs will be taken of all problem areas, and photo numbers recorded along with the description of the problem. Suggested corrections will be included where possible.

Frequency: Annually, preferably in early summer, to allow time to schedule emergency repairs.

Duration: On-going.

Data Storage: On file at Supervisor's Office.

Reports: Annual report.

Personnel: Zone Fisheries Biologist or RWSWM Staff.

SEE INSPECTION FORM ON FOLLOWING PAGE

h. Channel Substrate Monitoring

Program: Fisheries/Soil and Water

Activity, Practice, or Effect: Project Monitoring; Effectiveness of culvert removal and road improvements on the channel condition in South Fork Tributaries.

Project Name: SFSR Road Project Channel Substrate Monitoring.

Location: Cabin, Goat, Fourmile, and Camp Creeks; Cascade and Krassel Districts.

Objectives: (1) Quantify changes in channel substrate to characterize fish habitat and provide a basis for interpreting fish monitoring results.

(2) Test the sensitivity of several monitoring techniques.

Parameters: Difference in particle size distribution above and below areas of disturbance.

Methodology: Cobble embeddedness, Free Matrix, Photos, Gradient, Stream Width, and Large Organic Debris. Sample locations will be above and below areas of disturbance.

Frequency: Annually.

Duration: Before construction (1990), and annually for 2 - 3 years.

Data Storage: Forest Files, PC or DG database. Will be included with Baseline channel monitoring.

Analysis: SPSS-X

Reports: Written report to files each year after monitoring.

Personnel: Temporary biological technicians and aids under supervision of Krassel Zone Biologist.

i. Chinook Egg Basket Monitoring

Program: Fisheries

Activity, Practice, or Effect: Project Monitoring, Facilities, SFSR Road, Chinook Salmon emergence from egg baskets placed in the South Fork Salmon River. Note: monitoring is contingent on availability of wild chinook eggs, and other monitoring may be substituted if eggs are not available.

Project Name: SFSR Road Project Egg Basket Monitoring.

Location: Poverty and Krassel spawning areas, Krassel District.

Objectives: (1) Determine the relationship between salmon egg survival and substrate composition.

(2) Validation of embeddedness and core sampling techniques as indicators of fish habitat condition.

Parameters: Percent survival of fish, water temperature, dissolved oxygen, particle size composition.

Methodology: Salmon eggs are placed in baskets with a mixture of cobble, gravel, and fine sediment. Baskets are then placed in the South Fork during early October within salmon redds to incubate over winter. Baskets are excavated in April, and surviving fish are counted and released. Basket materials are sieved to determine particle sizes. The relationship between egg survival and substrate composition are determined from the data.

Frequency: Dependant on availability of eggs.

Duration: 1-2 times until completion of the road project. This activity may continue as part of the baseline monitoring if it provides reliable information and funding is available.

Data Storage: On File at Supervisor's Office.

Analysis: To be determined.

Reports: Written report to files each year after monitoring.

Personnel: To be determined; Cooperative effort with the Intermountain Research Station, and State Department of Health and Welfare.

j. Archaeological Inventory

Program: Archaeology

Activity, Practice, or Effect: Baseline and Implementation monitoring to determine the locations of important cultural, historic or prehistoric sites.

Project Name: South Fork Project Archaeology Inventory.

Location: Krassel and Cascade Ranger Districts.

Objectives: To protect or recover important sites affected by the construction.

Parameters: Description and location of sites.

Methodology: Field survey.

Frequency: Once, before construction.

Duration: One field season.

Data Storage: Forest files.

Analysis: Written summary report.

Reports: Submitted to Idaho State Historical Preservation Office, and on file at Supervisor's Office.

Personnel: Forest archaeologist and seasonal archaeologists.

k. Archaeological Implementation Monitoring

Program: Archaeology

Activity, Practice, or Effect: Implementation monitoring; Observe construction activities to determine if archaeological sites are uncovered during construction.

Project Name: South Fork Project Archaeology Monitoring.

Location: Krassel and Cascade Ranger Districts.

Objectives: To protect and recover important archaeological sites uncovered during construction.

Parameters: occurrence of signs of historic or prehistoric activities.

Methodology: Observation of land-disturbance.

Frequency: When needed during construction.

Duration: For duration of land-disturbing activities.

Data Storage: Forest files.

Analysis: Written summary report if sites are encountered.

Reports: Submitted to Idaho State Historical Preservation Office, and on file at Supervisor's Office.

Personnel: Forest archaeologist and seasonal archaeologists.

2. BASELINE MONITORING

a. SFSR Fish Habitat Substrate Monitoring

Program: Fisheries/Soil and Water

Activity, Practice, or Effect: Baseline; Comparison of stream channel condition in selected monitoring sites in the South Fork Salmon River drainage.

Project Name: SFSR Fish Habitat Substrate Monitoring.

Location: Krassel and McCall Ranger Districts, 30 monitoring sites within the South Fork Salmon River Drainage.

Objectives:

1. To implement monitoring of fish habitat substrate condition to the Forest Plan standards.
2. Correlation of different substrate measures to determine future monitoring needs.
3. Document annual conditions.
4. Determine average stream gradient within sample reach.

Parameters: Particle size distribution.

Methodology: Cobble Embeddedness, Free Matrix, Core Sampling, Occular Measurements, Photos, Gradient, Stream Width, and Large Organic Debris.

Frequency: Annually.

Duration: Fully implemented in 1989, continuous.

Data Storage: Forest files, PC or DG database.

Analysis: SPSS-X

Reports: Written report to files each year after monitoring.

Personnel: 6 temporary biological technicians and aids under supervision of Krassel Zone Fisheries Biologist.

b. SFSR Gage at Krassel

Program: Soil and Water

Activity, Practice, or Effect: Baseline, Hydrometeorological Monitoring,
Streamflow.

Project Name: South Fork Salmon River Gage at Krassel.

Location: Krassel McCall Ranger Districts.

Objectives: 1. To determine daily streamflows on the SFSR for use in
various hydrologic analyses.

Parameters: Streamflow.

Methodology: Contract with USGS to operate existing streamflow gage.

Frequency: Hourly.

Duration: Through life of SFSR Road Project.

Data Storage: USGS WATSTORE files, Forest files.

Analysis: WATSTORE Analyses.

Reports: Flow data will be published annually in "Water Resource Data for
Idaho". Printouts on hydrologic analysis will be maintained on
file at the Forest.

Personnel: Forest Hydrologist or SFSR Hydrologist to request analysis from
the USGS and provide interpretations.

c. SFSR Cross-Section Monitoring

Program: Soil and Water

Activity, Practice, or Effect: Baseline, Stream Channel Condition

Project Name: South Fork Salmon River Cross-section Monitoring.

Locations: Six reaches on the Payette NF with several cross-sections (XS) at each reach. 1) Stolle Meadows, 4-XS; 2) Dollar Creek, 3-XS; 3) Poverty Campground, 3-XS; 4) Poverty Flat, 3-XS; Glory Hole, 3-XS; 5) Oxbow, 3-XS; 6) Krassel Gage, 3-XS.

Objectives: Evaluate long-term trend of sediment deposition in the South Fork Salmon River.

Parameters: Cross-sections surveys; photographs.

Methodology: Field: Cross-section surveys, photographs.

Frequency: Cross-sections every 4th year.

Duration: Cross-sections established 1987, continue every 4th year; due in 1991

Data Storage: District files.

Analysis: Changes in channel hydraulic geometry.

Report: Report to SFSR Steering Committee.

Personnel: District Monitoring Crew under supervision Krassel District Fisheries Biologist

d. SFSR Snorkel Counts

Program: Fisheries

Activity, Practice, or Effect: Baseline monitoring; Snorkel counts of fish in the South Fork Salmon River.

Project Name: SFSR Snorkel counts.

Location: Snorkeling transects are established at Stolle Meadows, Dollar Creek, Poverty Flat, Oxbow, and Glory Hole.

Objectives: To determine trends in fish species and numbers in each of the monitoring locations.

Parameters: Visual estimates of fish species and numbers.

Methodology: Two divers make one pass at each transect using established lengths and widths determined by water clarity at the time of use. Fish species and numbers are recorded underwater.

Trends in fish numbers indicate of the general viability of the fisheries in the river, and represent the cumulative impacts from all natural and man-caused events affecting fish or fish habitat in the sampling locations.

Frequency: Annually.

Duration: Until Forest Plan goals are met (See Forest Plan IV-235-236).

Data Storage: Cascade District files.

Reports: Results will be summarized in an annual report on file at Cascade Ranger District.

Personnel: District Fisheries biologist.

e. SFSR Redd Counts

Program: Fisheries

Activity, Practice, or Effect: Baseline Monitoring; Salmon redd counts in the South Fork.

Project Name: SFSR Redd Counts.

Location: South Fork Spawning areas.

Objectives: To monitor the relative spawning success of chinook salmon.

Parameters: Number and location of redds.

Methodology: Salmon redds (gravel "nests" where eggs are deposited in late summer) are counted and mapped in the river by aerial surveillance.

Frequency: Annually.

Duration: On-going.

Data Storage: Idaho Department of Fish and Game.

Reports: Results are published annually by the Idaho Department of Fish and Game.

Personnel: Idaho Department of Fish and Game.

f. Surveillance of Gray Wolf Occurrence

Program: Wildlife

Activity, Practice, or Effect: Baseline Monitoring; Surveillance of gray wolf occurrence.

Project Name: South Fork Wolf Monitoring.

Location: Krassel, Cascade, and Lowman Districts.

Objectives: To document wolf occurrence, or lack of occurrence on the Boise and Payette Forests. Much of the suitable habitat lies in or adjacent to the South Fork drainage, and this is part of the Wolf Recovery Area. Biologists are interested in determining if significant wolf activity is occurring in these areas.

Parameters: Number and location of reported wolf sightings and tracks, and location and abundance of wolves.

Methodology: Aerial and ground surveys of big game herds during winter, and on-site inspection of reported sightings.

Frequency: Bi-weekly during late winter/early spring.

Duration: Dependant upon number of sightings, and if pack activity is discovered.

Data Storage: Forest files.

Reports: Report to Forest files each season.

Personnel: Wildlife staff.

3. VALIDATION MONITORING

a. SFSR Sediment Storage on Slopes

Program: Soil and Water Research (INT)

Activity, Practice, or Effect: Validation, SFSR Sediment Budget.

Project Name: SFSR - Sediment Storage on Slopes.

Location: Oompaul, Tailholt, Buckhorn, Fifty Dollar, and possibly Dollar Creek Drainages.

Objectives: Quantify slope storage of sediment from accelerated surface and mass erosion. Relate slope storage to estimates of total accelerated erosion. Relate channel delivery efficiency to site variables.

Parameters: Slope-stored sediment volume, particle size, organic matter content, root frequency, soil color, various site variables.

Methodology: Field survey techniques.

Frequency: One time.

Duration: 2 years.

Data Storage: INT Lab Files.

Analysis: To be determined.

Reports: Annual report to files; INT Research Report following project completion.

Personnel: INT Seasonal Soil Scientist and Technician under supervision of INT Research Soil Scientist.

b. SFSR Channel Sediment Storage Survey

Program: Soil and Water Research (INT)

Activity, Practice, or Effect: Validation, SFSR Sediment Budget.

Project Name: SFSR Channel Sediment Storage Survey.

Location: Mainstem SFSR, from Stolle Meadows to confluence with the East Fork of the SFSR.

Objectives:

1. Quantify current sediment storage.
2. Compare current storage with results from survey 20 years ago.
3. Survey distribution of sediment storage among channel forms.
4. Determine size distribution classes of sediments.

Parameters: Sediment volume and distribution.

Methodology:

1. Step-toe transants within homogeneous stream sections.
2. Volume estimates by probing depositions.

Frequency: One time.

Duration: 2 months

Data Storage: INT PC Files.

Analysis: Percentages in size classes, volumes of sediment.

Reports: Federal Interagency Sedimentation Conference.

Personnel: INT hydrologist and seasonal technicians.

c. SFSR Hydrometeorological Monitoring

Program: Soil and Water Research (INT)

Activity, Practice, or Effect: Validation, SFSR Sediment Budget.

Project Name: SFSR - Hydrometeorological Monitoring

Location: Project Camp and Krassel.

Objectives: Obtain continuous climate records.

Parameters: Max. min. and ave. air temp; max. min. and ave. relative humidity; precipitation; solar radiation.

Methodology: Sensors wired to data logger.

Frequency: Precipitation at 15 minute intervals, other parameters daily.

Duration: 5 years.

Data Storage: INT, on disk.

Analysis: As needed to support sediment budget.

Reports: Precipitation intensity and totals, daily sums; others as needed.

Personnel: After installation, 1 hydrotech and 1 hydrologist.

d. Peak Flow Effects on Armor Layer Development in Spawning Areas

Program: Soil and Water Research (INT)

Activity, Practice, or Effect: Validation, SFSR Sediment Budget.

Project Name: SFSR - Peak Flow Effects on Armor Layer Development in Spawning Areas

Location: Selected spawning areas on the mainstem SFSR.

Objectives: Determine relationship between peak flows and spawning gravel condition. Determine magnitude and frequency of flows need to cleanse gravels.

Parameters: Particle size gradations, stream flow, bedload

Methodology: Field survey to determine parameter values. Calculate relationship between stream energy and size distribution of material in transport and size.

Frequency: Once per year.

Duration: 4 years.

Data Storage: INT and/or cooperator files.

Analysis: Statistical analyses of relationships (above). Probability analysis of streamflow data.

Reports: Completion report by cooperator.

Personnel: Cooperator, INT hydrologists, hydro techs and volunteers (as available).

e. Calibration of Salmon Redd Model

Program: Soil and Water Research (INT)

Activity, Practice, or Effect: Validation, SFSR Sediment Budget.

Project Name: SFSR - Calibration of Salmon Redd Model.

Location: Selected spawning areas on the mainstem SFSR.

Objectives: Calibrate existing model for SFSR conditions.

Parameters: % Fines in spawning gravels intergravel velocities and dissolved oxygen.

Methodology: Construction of artificial redds, use of measured parameters to adjust model coefficients.

Frequency: Twice per year minimum.

Duration: 2 years minimum.

Data Storage: INT and/or ARS cooperator data files.

Analysis: Comparison of measured and model parameters, calculation of necessary coefficient adjustments.

Reports: Completion report by cooperator.

Personnel: ARS cooperator, INT hydrologists, hydro techs, and volunteers (as available).

f. SFSR Tributary Sediment Storage

Program: Soil and Water Research (INT)

Activity, Practice, or Effect: Validation, SFSR Sediment Budget.

Project Name: SFSR - Tributary Sediment Storage.

Location: Buckhorn, Dollar, Oompaul, No Name (north of Tyndall) Creek drainages plus 4 control drainages.

Objectives: Determine if past roading still contributes to accelerated sediment storage in tributary watersheds.

Parameters: Channel cross-section, Volumetric storage of sediment, Sediment particle size.

Methodology: Field survey of channel cross-sections and sediment behind obstructions, core sampling of sediment deposits.

Frequency: One time..

Duration: 2 years.

Data Storage: INT PCB Files.

Analysis: Statistical comparison between roaded and unroaded drainages.

Reports: INT Research Paper.

Personnel: INT Hydrologist, Hydro Techs, Volunteers (as available).

g. SFSR Quantification of Road Erosion

Program: Soil and Water Research (INT)

Activity, Practice, or Effect: Validation, SFSR Sediment Budget.

Project Name: SFSR - Quantification of road erosion.

Location: Buckhorn, Dollar, Oompaul, NoName (north of Tyndall) Creek Drainages.

Objectives: Determine existing erosion rates on open and closed roads in selected drainages; extrapolate to SFSR watershed.

Parameters: Erosion on roads and mass-wasted areas ground cover (vegetation).

Methodology: Field survey to identify problem areas. Field measurements of ground cover and erosion.

Frequency: Erosion measurements once each year. Survey - one time.

Duration: 4 years.

Data Storage: INT PC Files.

Analysis: Use measured erosion to estimate erosion on watershed scale.

Reports: INT Research Paper at completion of project.

Personnel: INT Hydrologists, Hydro Techs, and Volunteers (as available).

Appendix E

South Fork Road Management

Appendix E

South Fork Salmon River Road Management

OBJECTIVES

PROVIDE FOR REASONABLE LEVEL OF PUBLIC SAFETY

Road management should provide a safe experience for a driver willing to follow the rules and behave in a reasonable manner. We can have little or no effect on individuals who choose to disregard basic defensive driving rules and ignore warnings and signs.

PARALLEL EXISTING SYSTEMS

Traffic control nationwide is more or less standard. To introduce some exotic or unfamiliar driving rule would be confusing and perhaps hazardous to users.

KEEP ADMINISTRATION SIMPLE

Avoid complex, labor intensive systems we can not afford.

AREAS ADOPTED FOR MANAGEMENT ACTION

SPEED

Posting the road with standard speed control designed to match construction. Enforcement would be through a cost share agreement with Valley County.

SIGNING

Both conventional highway signing matching Federal Highway Standards and Extra ordinary signing is proposed. The extra ordinary signs would be both eye catching, safe driving slogans or posters. Signing will cover such items as: single lane road with turnouts, speed limits, expected vehicle use (non-commercial except by permit), use restrictions, advisory signing, CB useage)

STRIPING

Paint striping on the asphalt sections will be used to delineate road width, parking, and other road management needs.

COMMERCIAL VEHICLE USE

Commercial users will be subject to applicable requirments based on annually revised "Transportation Proceedures" for the road network in the South Fork drainage so to provide for consistant application. No hazardous material (refer to page IV-238 defination in the Payette National Forest Land and Resourse Management Plan) except lime and petroleum products will be transported over the South Fork Road. The basic intent is to eliminate all fuel and other hazardous material haul on the South Fork road unless absolutely necessary. Enforcement will be in part through a cooperative agreement with the Valley County Sheriff.

Commercial traffic is defined in this context as any vehicle in size class greater than 1 1/2 ton that is for hire.

All commercial traffic will employ use of a pilot car.

Fuel and lime may be transported only with the following additional requirments.

1. Provide for use on a case-by-case permitted basis (District Ranger authority).
2. Considerations in permit issuance are:
 - A. For emmergency use or to serve South Fork uses only.
 - B. Other routes available.
 - C. Weather
 - D. Use levels by recreational traffic.
3. Maximum fuel at one time is 500 gallons. Fuel must be carried in a DOT approved flammable fuel container.
4. Lime must be transported in enclosed vehicles.
5. A bond with a value commenserate to the risk involved will be required.

SIZE LIMITS

Vehicle size limits covering both commercial and non-commercial vehicles will be instituted by Special Order of the Forest Supervisors as needed. These restrictions can be seasonal (fishing season), daily (daytime use only) or year long.

SNOW PLOWING

A cooperator will be permitted to plow snow and maintain the road for winter use. An agreement to permit plowing will include provision for protection of the road facility, protection of the area's resources, and safety of the users.

Appendix F

**Life-Cycle
Cost Analysis**

Appendix F

Life-Cycle Cost Analysis

I. Criteria

- A. Study Period - 40 years
- B. Discount Rate - 4 percent
- C. Residual Value - \$ 0.00
- D. User Costs
 - 1. Asphalt Surface
 - a. \$ 0.31/mile per vehicle
 - 2. Gravel Surface
 - a. \$ 0.57/mile per vehicle
 - 3. Native Surface
 - a. \$ 0.70/mile per vehicle
- E. Average Daily Traffic
 - 1. 35 vehicles
 - 2. 2 percent annual growth

II. Comparison of Alternatives

A. Construction and Maintenance Costs

1. Alternative NAFP	
a. Construction Costs	\$ 1,710,000
b. Maintenance Costs	<u>1,850,000</u>
c. Total	\$ 3,560,000
2. Alternative EG	
a. Construction Costs	\$ 5,160,000
b. Maintenance Costs	<u>3,100,000</u>
c. Total	\$ 8,260,000
3. Alternative RAG	
a. Construction Costs	\$ 7,570,000
b. Maintenance Costs	<u>1,210,000</u>
c. Total	\$ 8,780,000

4.	Alternative NA	
a.	Construction Costs	\$ 0
c.	Maintenance Costs	<u>2,540,000</u>
d.	Total	\$ 2,540,000
5.	Alternative EA	
a.	Construction Costs	\$ 7,860,000
b.	Maintenance Costs	<u>840,000</u>
c.	Total	\$ 8,700,000
6.	Alternative RA	
a.	Construction Costs	\$ 7,990,000
b.	Maintenance Costs	<u>840,000</u>
c.	Total	\$ 8,830,000
7.	Alternative RG	
a.	Construction Costs	\$ 5,290,000
b.	Maintenance Costs	<u>3,100,000</u>
c.	Total	\$ 8,390,000

B. User Costs

1.	Alternative NAFP	\$ 750,000
2.	Alternative EG	1,500,000
3.	Alternative RAG	920,000
4.	Alternative NA	1,740,000
5.	Alternative EA	820,000
6.	Alternative RA	820,000
7.	Alternative RG	1,500,000

III. Summary Life Cycle Costs

COST ELEMENTS	ALTERNATIVES						
	NAFP	EG	RAG	NA	EA	RA	RG
Construction	1,710,000	5,160,000	7,570,000	0	7,860,000	7,990,000	5,290,000
Maintenance	1,850,000	3,100,000	1,210,000	2,540,000	840,000	840,000	3,100,000
Subtotal	3,560,000	8,260,000	8,780,000	2,590,000	8,700,000	8,830,000	8,390,000
User	750,000	1,500,000	920,000	1,740,000	820,000	820,000	1,500,000
Total LCC	4,310,000	9,760,000	9,700,000	4,280,000	9,520,000	9,650,000	9,890,000
Total LCC Cost Advantage	0	-5,450,000	-5,390,000	+ 30,000	-5,210,000	-5,340,000	-5,580,000
Rank	(2)	(6)	(5)	(1)	(3)	(4)	(7)

Appendix G

South Fork Road Maintenance

Appendix G

Maintenance of the South Fork of the Salmon River Road

I. Non-surfaced and Surfaced Roads

- A. Removal of embedded objects.
Removal of objects protruding above the existing road surface and causing significant traffic hazard.
- B. Rock raking.
Remove oversized rock from the roadway, improve blading efficiency and conserve roadway surface fines.
- C. Blading.
Blading of surfaced and non-surfaced roads to keep the traveled way in condition for traffic use while maintaining proper surface drainage.
- D. Logging Out.
Removal of fallen trees and vegetation from the traveled way to allow safe movement of traffic.
- E. Dust Abatement.
The abatement of dust by use of approved materials for the comfort and safety of the user and to prevent loss of material from the road surface.
- F. Surface Restoration.
Addition of material to traveled way to improve road segments where mineral fines have been removed by use, erosion, or bearing failure.
- G. Slide Removal.
Removal of rocks and slide debris. Included is loading, hauling, blading, and disposal of material to designated disposal areas.
- H. Surface Replacement/Aggregate Surface.
Replace aggregate road surface to original specification and depth which was lost due to wear or isolated surface failure.
- I. Repair Sloughed Shoulders.
Replace base support and surface to average road and shoulder width. If slough is caused by improper surface drainage, make required corrections to prevent future development of traffic hazard.
- J. Grade and Reshape Shoulders.
Shoulders for this activity are those which are constructed of a different material within the traveled way. Blade and reshape shoulders to insure safe conditions for vehicles leaving or entering the traveled way.
- K. Slough Removal From Ditches with End Haul.
Removal of soil and debris from ditch lines. Dispose of material in designated areas. This is for material not acceptable for the road surface.
- L. Cleaning of Culverts.
Clean culverts and inlet ditches to maintain free flow of water.

- M. Culvert Repair.
Repair or replace inlet section of culvert to maintain free flow of water.
Repair, replace outlet section of culvert to maintain free flow of water. Extend if necessary to prevent sloughing of down slope.
- N. Clean and Reshape Ditch.
Removal of soil, debris, and slough from ditch line to assure proper drainage.
- O. Culvert Replacement and Installation.
Replacement of culverts which have been damaged or failed, or installation of culverts which were not installed during original construction.
- P. Brush Cutting.
Removal of brush along roadside to increase sight distance and make traveling the road safer.
- Q. Brush Disposal.
Piling and burning of excess debris from brushing, logging out, etc. in designated areas. Attention given to fire hazard warnings.
- R. Apply Seed and/or Fertilizer.
Apply seed, fertilizer, netting to stabilize cut and fill slopes to prevent erosion, and slumps after repair of slump on fill or cut.
- S. Slide and Slump Repair of Fill Slopes.
Replace base support and surface to original road and shoulder width.
- T. Hazard Rock and Debris Removal From Backslopes.
Hazard rock and debris removal from backslopes to prevent loose or rolling rocks in the travelway.
- U. Hazard Tree and/or Stump Removal and Disposal.
Removal of stumps and trees along the road side which may fall on the traveled way or be struck by a car.
- V. Removing Debris.
Removal of rocks, brush, trash, etc. and deposited at designated locations.
- W. Repair of Headwalls and Toe Walls.
Replace rock, wire, concrete or mortar necessary to prevent drainage from by-passing structure causing damage to road bed on either side of structure.
- X. Minor Bridge Repair.
Repair of bridge items which do not affect the structural strength of the bridge.
Items include cleaning deck, cleaning drains, replacing running plank, repair of wearing surface, curbs and bridge railings
- Y. Major Bridge Repair.
Repair of bridge items which affect the structural strength of the bridge.
Items include bridge deck, stringers, retaining wall, and anchors.
- Z. Repair of Retaining Walls.

Cleaning and repairing of retaining walls so they remain functional and protect the road structure and traffic.

AA. Installation and Repair of Signs/Markers/Delineators.

Repair and installation of signs to inform the traveling public of geographic locations, directions, warning, and marking of hazards.

BB. Subdrainage.

Install CMP or perforated drain pipe to correct erosion or subgrade damage caused by springs and improper drainage.

II Maintenance of Asphalt Pavements

A. Refer to "A Pavement Rating System For Low-Volume Asphalt Roads" prepared by the "Asphalt Institute".

B. Refer to "Causes and Repairs of Asphalt Failure".

Appendix H

Sediment Analysis

Appendix H

Sediment Analysis

INTRODUCTION

After reviewing public and agency comments on the Draft Environmental Impact Statement for the South Fork Salmon River Road Project, the Steering Committee and Interdisciplinary Team agreed to have an indepth sediment analysis of the project. This analysis was conducted by the Project Hydrologist, Jolyne Lea, under the guidance of Walt Megahan of the Intermountain Research Station in Boise, Idaho.

The analysis procedure was developed by Walt Megahan from detailed research in erosion and sediment delivery from roads in the Silver Creek watershed, a tributary of the Middle Fork of the Payette River, in the Idaho Batholith geologic formation.

The use of BOISED was discussed by the Steering Committee, but they discarded it in favor of the new relationships developed by Walt Megahan that would produce more accurate erosion and sediment values. BOISED outputs are relative values used for comparison purposes only and have been misunderstood in the past. The new method gives a more accurate picture of what is occurring on the ground.

ANALYSIS METHODS

Detailed information is needed to use the relationships developed by Walt Megahan. The following information was collected from a road survey completed in 1989:

1. Cross-sections of the road.
 - a. road width
 - b. ditch width
 - c. cut length and gradient
 - d. fill length and gradient
2. Terrain slope

Other information was collected from maps and contour plots of the road. The other information includes:

1. Aspect
2. Distance from a cross drain
3. Source Area

For purposes of this analysis, the cross sections were selected for their representation of change along the road. Areas that were similar were bracketed by cross section selection in the beginning and end. This provided measurements for almost every change along the entire road. The cross sections were then multiplied by the distance along the road that they represent. This distance is half way between the station before and the one after. Of the 5455 cross sections surveyed on the South Fork Salmon River Road and bypasses, 1573 were used in the analysis. These cross sections were then measured for the other parameters used in the equations.

For each cross section, the relationships are used to determine erosion and sediment for the area of the road that the cross section represents. The end products are a value for erosion of 1) the cut, 2) the fill, and 3) the road tread and ditch; and a value for sediment delivery for 1) the fill and 2) the cut, tread and ditch as routed through cross drains. The erosion is an average annual value for a road beginning after the first winter.

Mitigation measures were included when they were part of the alternative (Alternative NA has no mitigation associated with it). The effectiveness of the mitigation was provided by the research conducted by Walt Megahan at the Intermountain Research Station and by Boroughs and King, 1989. The alternatives change by location and by the mitigation being applied to the road tread, cut and fill. Native surface, gravel and pavement are considered in the alternatives. The existing condition is that existed at the time of this publication (July 1990). Part of the Forest Plan (NAFP) direction had already been implemented on part of the road. In the NA Alternative, the sediment from the northern 10 miles of road is mitigated by having a gravel surface road.

Other mitigation measures considered for some alternatives include Soil-Bioengineering on seven sites along the road. This procedure provides vegetation growth and structural stability in seven of the worst erosion sites on the road. Although there are retaining walls proposed to be installed to provide a minimum road width in some areas, the placement and amount of retaining walls are unknown at the time of analysis and are not considered here.

Other measurements needed for analysis had to be estimated due to a lack of time. These measures are the amount of vegetative cover and other obstacles that provide soil protection and hillslope storage of eroded material. These estimates were made from photos (project records), soil mapping (Associated Earth Sciences, 1989) and stratification reports (Arnold, J. et al., 1989).

The collected measured and estimated data was put into LOTUS spreadsheets. The equations for the erosion and sediment delivery equations were input and the calculations run. The information for every cross section was recorded and combined with other cross sections for cut, ditch and tread, fill and total erosion; and delivery for those cross sections by fill, culvert and total delivery.

RESULTS

The results presented in the FEIS include the total erosion or sediment delivery for the alternatives and the percentage of variation between them. The actual tons of sediment are presented here for information. The document contains the comparison by alternative in table IV-5. The use of these results are for comparison and for use in cumulative effects for the whole basin.

Table H-1. The Erosion and Sediment Delivery by Alternative for the South Fork Salmon River Road Project in Average Annual Tons.

Alternative	Erosion (tons/year)	Sediment Delivery (tons/year)
NA	696	477
NAFP	458	300
EA	460	300
EG	472	308
RA	455	298
RG	467	305
RAG	456	298

For ease of comparison with other documents, the following conversion factor is provided:

$$(\text{TONS}) \times 0.84753774 = (\text{CUBIC YARDS})$$

These values include erosion from the cut, tread and ditch and sediment delivery from culverts and fill slopes. The breakdown of erosion for given areas, cut, fill or road tread and ditch alone, and delivery for these, are available in the record. An enormous amount of information has been used and is available for review.

DISCUSSION AND CONCLUSIONS

Several conclusions can be made from the results presented in Table H-1. The annual erosion and sediment delivery is reduced through any action proposed in comparison to the existing condition.

The amount and success of mitigation measures greatly affects the erosion and sediment outcome. Many single and combined measures provide stabilizing factors that reduce erosion and delivery. The most probable and effective mitigation has been used in these calculations.

Some assumptions are needed to perform the analysis. Assumptions were mostly based on Engineering design projections. The assumptions that were used as advised by the engineering group are that 1) the present road prism would be similar to the proposed prism; 2) new cuts and fills would not be made except in one location; and 3) retaining walls would be put in, but how much and where were unknown and unanalyzed at the time of the analysis.

And the equations make some assumptions too. These equations were developed for new road construction, and reflect the condition from year 2 to year 5. The study road was constructed in very similar terrain and precipitation regime, and has similar erosional characteristics.

Where assumptions and estimates were made, we were conservative and leaned towards the value that would produce more erosion and sediment, so as not to underestimate the consequences of the project. We based all of our judgements on the best research, information and judgements available and often consulted Walt Megahan for his expert advice.

The differences between the Alternatives is in location and in surfacing. All of the newly proposed alternatives would have equal stabilization, revegetation and rehabilitation on cut and fill slopes. The

surfacing options are a direct stabilization of the road surface and vary between 79% to 95% effective in our analysis. Locating the road to the Knox Ranch Bypass provides flatter terrain and allows for recovery of the main route along the river after obliteration and rehabilitation have occurred.

The equations used in this analysis determine the erosion from the road prism and determine the extent of the sediment volume delivered to the nearest cross drain. They determine the amount of material that gets into a channel with the potential for deliverance to perennial streams. Delivery to a cross drain does not mean that the sediment will reach the South Fork Salmon River in any year. The sediment is delivered into storage, where it has the potential to move. Over time extreme precipitation events will move the stored material. This analysis makes no attempt at determining the routing, timing or movement of the material once it is in a channel.

All the years that the road has been in place were used to determine the amount of sediment that travelled to the nearest downslope channel. This information was used to calculate the amount of storage that had been filled to give a more accurate travel distance of this years eroded material.

Some perceptions are apparent when you look at the distances between the place where sediment is delivered and the South Fork Salmon River. The farther away from the river the road is, the more storage is available to receive sediment. The existing road is next to the river in most places and has almost total delivery directly to the South Fork Salmon River. At the Southern end of the road, the Knox Ranch Route is over half a mile away in places from the river, and there is storage on the hillslope and in the channels for the amount of sediment that the bypass produces. This storage is temporary, but the sediment may be stored for many years.

The analysis also does not take into account the obliteration and rehabilitation of closed roads. A mitigation factor was determined to estimate the benefits of returning the road to a more natural condition.

Erosion and sediment production from construction and first year were not part of the analysis, but were accounted for. Walt Megahan's research has shown that for new road construction, 5 times the sediment production occurs in the first year in comparison to years 2 to 5. We used this information in our determination of amounts for direct sediment removal. (1500 tons or 1300 yards). The direct removal will more than offset the sediment from the first year and construction sediment.

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Robert Smith	Engineering Technician

Appendix I

US Fish and Wildlife Biological Opinion

BIOLOGICAL ASSESSMENT
SOUTH FORK SALMON RIVER ROAD IMPROVEMENT
PAYETTE NATIONAL FOREST
11/20/89

INTRODUCTION

This Biological Assessment has been prepared to evaluate the effect of the proposed South Fork Salmon River (SFSR) Road Project on listed Threatened or Endangered species.

In accordance with the requirements of Section VII of the Endangered Species Act, as amended (ESA), the Payette National Forest on October 20, 1989 requested an updated list of Threatened, and or Endangered species within the SFSR area from the U.S. Fish and Wildlife Service (USF&WS), Endangered Species Program Coordinator in Boise, Idaho. The Forest was requested by the USF&WS to consider the bald eagle and the gray wolf as both species are known or suspected to frequent the SFSR and are listed as Endangered.

MANAGEMENT DIRECTION

Management direction for the SFSR Road, including the portion of the Boise National Forest, was established in the Payette National Forest Land and Resource Management Plan (Forest Plan), signed May 1988. The Forest Plan included direction to close and convert approximately 16 miles of the road to a trail, relocate the upper 4 to 6 miles, and gravel the remaining 10 miles. A primary objective of the direction was to improve fish habitat by reducing sediment deposited in the adjacent South Fork Salmon River.

Another part of the Forest Plan direction was management of the road in the short-term or interim until the long-term direction could be implemented. In November of 1988, the Payette and Boise National Forests issued an Interim management Decision to close the road during the winter Months (January 1 to April 1) to help reduce sediment from the road surface. Residents of Yellow Pine, a community whose access was affected by the decision appealed the decision. They wanted year around access to Yellow Pine, via the SFSR.

On December 22, 1988, the U.S. District Court issued an Order enjoining the Forest Service from prohibiting snowplowing and vehicular travel on the SFSR Road between that time and when the road was reconstructed. The Order allowed unrestricted travel by the public except during extremely muddy conditions. As settlement for the Order, the Forest Service agreed that the Interim Management Decision would be re-evaluated.

It was recognized that leaving the road open in the winter does not conform with Forest Plan direction nor the 1985 Biological Opinion from the USF&WS and required further analysis. It was the Fish and Wildlife Service Biological Opinion that maintenance of an open road and the long term effect of uncontrolled vehicular access on the SFSR during the winter periods are likely to jeopardize the continued existence of the gray wolf. This opinion was based upon the potential for human caused wolf mortality that threatens the survival and recovery of the gray wolf in the United States. This opinion regarding wolf management was rejected in a U.S. District Court hearing in February 1988

whereby the Judge stipulated that the road be managed as open for Yellow Pine residents.

Through passage of the 1989 Appropriation Bill (H.R. 4867), the United State Congress allocated \$8 million to the Forest Service to pave the South Fork Salmon River Road with the intent of reducing sediment produced from the road to the fullest extent possible, while maintaining motorized, wheeled access.

To comply with the intent of the congressional appropriation, the Regional Forester directed the Payette National Forest Supervisor to analyze direction for road management based on the congressional appropriation. An environmental impact statement was prepared that documents that analysis.

The Payette National Forest Supervisor will select an alternative for long-term direction for the SFSR Road that best meets the intent of the following decision criteria.

The selected alternative improves fish habitat by reducing sediment in the SFSR.

The selected alternative best meets the intent of the congressional appropriation.

A decision on winter management of the road will comply with the Order of the U.S. District Court enjoining the Forest Service from prohibiting snowplowing and vehicular travel on the SFSR road and voids the 1985 Biological Opinion on wolves.

Management of the SFSR Road will provide for the long-term conservation and recovery of wolves within the Central Idaho Recovery Area to meet the intent of the Endangered Species Act as described in the Northern Rocky Mountain Wolf Recovery Plan.

DESCRIPTION OF THE PROPOSED ACTION

The SFSR is located in central Idaho. The topography of the upper river drainage consists of relatively gentle slopes and has received fairly intensive timber harvesting and road building. The central and lower reaches of the drainage are relatively unroaded and have oversteeping toe slopes adjacent to the river. The lower portion of the SFSR is in the "Frank Church River of No-Return Wilderness".

The proposed SFSR Road Project begins at the Warm Lake Highway and continues to the confluence of the South Fork Salmon River with the East Fork of the South Fork Salmon River or approximately 33 miles. Figure 1 displays the route of the Forest Service preferred alternative, Alternative B, winter option 3. The proposed project includes the area from the river to the top of the cut slope of the road, alternative road locations, and areas such as slumps above the road that are contributing sediment.

Alternative B option 3 would surface the entire length of the SFSR road with asphalt pavement. Curbs would be installed on the cutslope side where needed. Culverts would be installed in drainages. Public would have access 7 days per week. Informational signing along the road will caution users that gray wolves may be present in the area and are protected under the Endangered Species Act. Big game ranges on the east side of the SFSR would be a high priority for prescribed burning as a means to help draw big game away from the road corridor during winter and early spring. Prescribed burning will be designed to create a mosaic of forage and cover away from the immediate road corridor while meeting sediment reduction objectives for the SFSR. To provide security to foraging big game and maintain short sight distances, forested slopes immediately adjacent to the road and river would be managed to maintain a screen of trees and shrubs.

This alternative was designed to best meet the following identified intergrated goals.

1. Reduce the most sediment from the road surface for the length of the South Fork road.
2. Provide year around vehicle access to Yellow Pine.
3. Follow forest wide direction (page IV-35 of Forest Plan) that winter range will be maintained or improved.
4. Monitor and if necessary, restrict access on big game ranges during the winter period to reduce disturbance and physiological stress.

ENDANGERED SPECIES

BALD EAGLE

The bald eagle has been observed in the SFSR drainage in the winter, but they typically return to nesting sites outside the drainage each spring. Although there have been spring and summer sightings, there are no known nesting sites in the river corridor. The effect on the bald eagle has been addressed under previous biological evaluations at the Forest Plan level and at SFSR project level and will not be considered further here. A Biological Opinion dated July 22, 1985, indicated that winter management activities along the SFSR road would have no effect on bald eagles. The preferred alternative for winter activities is consistent with the July 22, 1985 Biological Opinion.

NORTHERN ROCKY MOUNTAIN WOLF

The Northern Rocky Mountain Wolf Recovery Plan, and information on essential habitat, habitat preference, and wolf sightings associated with the SFSR road have been considered in Biological Evaluations for previous projects and the Biological Assessment for the Forest Plan. These documents provide a thorough discussion of the gray wolf and its habitat needs.

This current Biological Assessment covers portions of the upper and central portions of the SFSR drainage and assesses the effect of this proposal on the gray wolf.

Scattered reports of gray wolf sightings in the SFSR drainage have occurred since the late 70's. The abundance of reports of wolf activity in the SFSR drainage (33 probables*) and surrounding area (an additional 1 confirmed and an additional 110 probables*) provides the basis for the projected presence of 4 of 6 wolves in the area.

Although there have been 33 probable wolf sightings within the SFSR drainage since 1976 there has not been conclusive proof of packs or individuals regularly using the SFSR drainage during the winter period. Most wolf activity in the SFSR drainage, if and when it does occur, appears to be lone individuals with no set territory. There are no known den, or other identified sites used by wolves in the river corridor. A 1989 spring survey was conducted on the Payette portion of the SFSR to identify wolves and their sign. Two sets of tracks and four scats of large carnivores were found. No observations of wolves occurred.

CUMULATIVE EFFECT

In addition to the proposed SFSR road reconstruction the following activities will occur over the planning horizon in the SFSR drainage.

The Fifteen-year Timber Activity Schedule calls for a harvest of 110 million board feet from 11 timber sales and other small sales.

YR	SALE NAME	VOLUME MM	TOTAL ROADS
98	PARKS CREEK	2.0	0.0
99	BROWNS CAMP II	3.0	0.0
00	DEADSMANS BAR	10.0	0.5
		15.0	0.5

Open roads within the SFSR drainage will remain as current.

There are no livestock allotments in the area and none are planned. The area does have recreational pack and saddle stock allotments.

The area may have moderate mineral potential. No large scale mining projects are anticipated in the near future within the project area. The road corridor provides access to a major mining district on the East Fork of the SFSR.

* Based on data from the Idaho Natural Heritage Foundation as of October 26, 1988.

The area receives a large amount of recreation use mostly big game hunting and firewood gathering. There is a developed campground near Buckhorn Bar which receives a moderate amount of recreation use. The current Payette Travel Plan restricts motorized use to designated routes and snowmobile use is restricted to the SFSR road. Paving and winter snow removal on the SFSR road as described under the preferred alternative will allow for increase access and use during the winter months.

DETERMINATION OF EFFECT

The proposed action, including road improvement, access management through the use of information signing, timber management and recreation use is not likely to adversely affect the gray wolf or its habitat. This conclusion is based upon the lack of conclusive evidence that wolves regularly occur in the SFSR drainage during the winter period. The possibility that a wolf mortality would occur as a result of human wolf interaction is remote due to the publicity in the area that wolves may be present and are protected by law. Signing on the SFSR road will also caution road users of the protected status of the gray wolf.

The results of this current determination differs from the determination of the original 1985 Biological Evaluation on the SFSR Road which indicated a "may effect" for those alternatives that allow motorized winter access. The USF&WS response and Biological Opinion dated July 22, 1985, regarding Section 7 formal consultation on the SFSR Road concluded that alternatives that allow motorized traffic year-around would likely jeopardize the continued existence of the gray wolf. The USF&WS recommended an alternative that included limited and restricted access along the SFSR Road. In their opinion, " chronic disturbance to wolves occasioned by winter access along the SFSR road would result in extirpating of the 4-6 wolves currently estimated to be using this key range, an area representing nearly half of the 20,000 square miles of occupied habitat in Idaho. Direct mortality (illegal shooting), reduced reproduction from loss of any females, and a general lowered ungulate food base will foster this 50 percent reduction of the existing range of the species in Idaho."

Since this initial opinion by the USF&WS, considerable discussion between agencies and individuals concerning the effect of roads on wolves has occurred. The risk of a human-caused wolf mortality in the SFSR drainage as a result of allowing motorized access on the SFSR road is remote due to the relatively low number of lone wolves believed in the area and the informational program carried out to alert people in the area about the protected status of the wolves.

Until pack activity or at least more conclusive evidence of wolf activity is documented in the area, human access should not adversely impact the wolf or be a threat to the long-term recovery effort in the SFSR drainage and central Idaho.

As a result of this reassessment, the emphasis has shifted from not allowing winter access to the SFSR road to a program of public education, and

documentation of wolf activity within the SFSR drainage. Emphasis is also on determination if pack activity is occurring and documentation of mortality.

CONSERVATION REQUIREMENTS

Until monitoring and surveys indicate the need for more specific conservation requirements, no special restrictions on human access or use of the SFSR drainage is required for the protection of the wolf. Emphasis will be on providing information to the public on the protected status of the wolf. When individual animals or packs are documented to use the SFSR drainage on a regular basis, an updated analysis of the situation will need to be conducted to see if specific conservation requirements are required to meet wolf recovery objectives.

REFERENCES

U.S. Fish and Wildlife Service. 1987. Northern Rocky Mountain Wolf Recovery Plan.

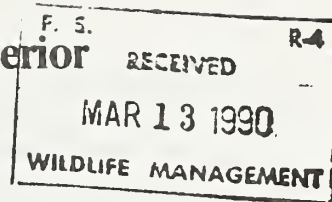
U.S. Forest Service. 1988. Payette National Forest Land and Resource Management Plan.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

BOISE FIELD OFFICE
4696 Overland Road, Room 576
Boise, Idaho 83705



March 1, 1990

Mr. J. Stan Tixier
Regional Forester
U.S. Forest Service
324 25th Street
Ogden, Utah 84401

Re: 1-4-90-F-1 (Revision to
1-4-85-F-29)
(6003.3950 A) (113.0301)

Dear Mr. Tixier:

This is the Fish and Wildlife Service's (Service) response to your December 19, 1989 letter and November 20, 1989 biological assessment requesting Formal Section 7 consultation on a revised management proposal for the South Fork Salmon River Road on the Payette and Boise National Forests. Earlier formal Section 7 consultation for management of this road was conducted in 1985 (1-4-85-F-29). We concluded then, as we do now, that management of this road under the revised proposal is not likely to jeopardize the continued existence of the endangered bald eagle. Most of the potential impacts and controversy of management of this road deals with conservation of the endangered gray wolf. It is the biological opinion of the Service that your preferred alternative, alternative B, option 3, is not likely to jeopardize the continued existence of the endangered gray wolf.

Since 1985, considerable interagency discussion has occurred concerning management of the South Fork road and the need for adequate conservation protection for the gray wolf. The Forest Service's management of the South Fork road was the subject of U.S. District Court hearings in February, 1988 and December, 1988 in Boise. On December 22, 1988 the District Court issued an order preventing the Forest Service from implementing conservation practices outlined in our July 22, 1985 biological opinion and thus nullified the Service's biological opinion. In addition, specific language was placed in the Fiscal Year 1989 Appropriations Bill (H.R.4867) that limited the Forest Service's options for road and wolf management.

All of the above actions have focused public attention on the South Fork Salmon River area and agency efforts for road and wolf management. People in Idaho are aware of the sensitivity of road and wolf management in this area.

Further background on wolf management and management of the South Fork road can be found in our July 22, 1985 biological opinion, the Forest Service's biological assessment for that formal consultation, the Payette and Boise National Forest plans, the Service's 1987 Northern Rocky Mountain Wolf Recovery Plan, U.S. District Court records concerning management of this road and the November 20, 1989 biological assessment for the revised road management proposal.

The revised South Fork Salmon River road management alternative was essentially crafted by U.S. District Court and FY '89 Appropriations Bill language. Under the preferred alternative B, option 3, the surface of the entire length of the South Fork road would be covered with asphalt pavement to reduce sedimentation of the river for the benefit of anadromous fisheries. The proposed road project begins at the Warm Lake highway and continues northward for 33 miles to the confluence of the South Fork with the East Fork. The public would have year-round access to Yellow Pine seven days per week.

To protect the gray wolf, the Forest Service proposes the following conservation practices:

1. A program of public education to alert area people to the wolf recovery program;
2. Informational signing on the South Fork road to caution road users of the protected status of the gray wolf;
3. Elk and deer wintering habitat will be improved up gradient from the road to keep ungulates, the prey for wolves, away from the road to thus reduce disturbance and potential poaching of both wolves and ungulates. Screening of trees and shrubs will be maintained between the road and winter forage;
4. Biological surveys will be conducted to document wolf activity (denning, winter use, pack activity, etc.) within the South Fork Salmon River drainage; and
5. When surveys document regular use by individuals or a wolf pack(s), an updated analysis of road management will be conducted to see if other, more specific, conservation practices are needed to meet wolf recovery objectives.

Effects of the Revised Proposed Action on the Gray Wolf

The Service's concern is with human disturbance activity in ungulate winter range and the potential of human caused wolf mortality. In winter, elk and deer are concentrated in areas along the South Fork road. As wolves increase in central Idaho, we can expect wolves to use elk and deer for prey on this winter range. Wolves in this area may be more visible to humans, thus making wolf mortality likely. The Forest Service proposes to implement conservation practices detailed above to reduce potential wolf vulnerability. These practices, in addition to the recent wide publicity given the wolf recovery effort and the South Fork road management, should reduce the likelihood of both direct take and incidental take of wolves.

Cumulative Effects

Cumulative effects are those impacts of future State and private actions affecting endangered and threatened species that are reasonably certain to occur in the action area. Future Federal actions will be subject to the consultation requirements established in Section 7 of the Act; therefore, they will not be considered cumulative to the proposed action. We know of no other activities in this area that have adverse cumulative effects.

Incidental Take

Section 9 of the Endangered Species Act (Act), as amended, prohibits the take (harass, harm, pursue, shoot, wound, trap, etc. or attempt to engage in any such conduct) of listed species without special exemption. Under the terms of Section 7 (b) (4) and 7 (a) 2, taking that is incidental to and not intended as part of the proposed action is not considered taking within the bounds of the Act, provided that such taking is in compliance with the terms and conditions of the biological opinion.

"Harass" under the definition of "take" in the Act means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering.

Harassment to gray wolves resulting from disturbance may occur from the reconstruction, use and maintenance of the South Fork road; therefore, non-mortality incidental take from the proposed action is likely to occur and is permitted.

Due to the species extremely low population, incidental take resulting in direct mortality of the gray wolf is not authorized. To assure that no gray wolf is taken, the Service establishes the following reasonable and prudent measures for the Forest Service to minimize incidental take under Section 7 of the Act:

1. Inform the public about the protected status of the gray wolf and the wolf recovery effort.
2. Provide law enforcement surveillance per Section 7 (a) 1 of the Act to deter violators.
3. Reduce human disturbance and potential poaching of wolves, elk and deer during winter months.
4. Monitor/document wolf activity and evaluate effectiveness of conservation practices 1 through 5 above.

To implement the foregoing reasonable and prudent measures, the Service establishes the following terms and conditions for incidental take:

Concurrent with road reconstruction/asphalt paving, the Forest Service will fund and;

1. Develop and implement a program of public education to alert area people to the wolf recovery program, including, but not limited to the constructing, placing, and maintaining easily visible informational signing at several places on the South Fork road to caution road users of the protected status of the gray wolf;

2. To establish a "presence" in the area and to detect possible incidental take, the Forest Service will conduct patrols in the South Fork drainage during times when deer and elk are on their winter range. The results of these patrols will be reported in the annual report to the Service described in item 5;

3. Improve elk and deer wintering habitat up gradient from the road to keep ungulates, the prey for wolves, away from the road to thus reduce disturbance and potential poaching of both wolves and ungulates. Maintain screening of trees and shrubs between the road and winter forage;

4. a. Conduct annual biological surveys (coordinated with the Central Idaho Wolf Recovery Steering Committee) to document wolf activity (denning, winter use, pack activity, etc.) and to detect any incidental take within the South Fork Salmon River drainage;

- b. Annually (September) submit a report to the Service stating 1) what progress was made during the previous year to implement the measures above and 2) what plans and proposed funding levels are being made to implement the above measures for the coming year; and

- c. Update the biological assessment on road management when surveys document regular use by individuals or a wolf pack(s), to see if other, more specific, conservation practices are needed to meet wolf recovery objectives.

The above terms and conditions should greatly reduce the likelihood of direct mortality to gray wolves in the South Fork River drainage. However, should a gray wolf(ves) within the South Fork drainage be found dead, you should 1) immediately notify Service Agent Earl Kisler (208-334-1644), or Idaho Department of Fish and Game, Regional Supervisor Stacy Gebhards (208-327-7025) so that cause of mortality can be determined and 2) reinitiate formal Section 7 consultation with the Service.

Conservation Recommendations

Section 7 (a) (1) of the Act directs Federal agencies to utilize their authorities to further the purpose of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as suggestions from the

Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat. The following conservation recommendations, when carried out, would further reduce potential impacts to the gray wolf.

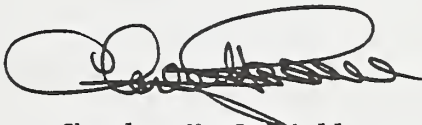
1. Provide remote sensing surveillance equipment at strategic places along the road to detect shooting of elk, deer and/or wolves and to identify violators. Such equipment may be available through the Drug Enforcement Agency or the National Guard on a loan basis.
2. Provide for slow speed limits on the road to minimize auto/wildlife strikes.

Conclusion

This concludes formal consultation on the revised South Fork Salmon River road alternative. Reinitiation of formal consultation is required if the amount or extent of incidental take is exceeded, if new information reveals effects of the action that may affect listed species in a manner or to an extent not considered in this opinion, and/or if a new species is listed or critical habitat designated that may be affected by the action. The terms and conditions under incidental take are mandatory and must be implemented by your agency. The conservation recommendations are discretionary but are designed to avoid adverse effects to listed species.

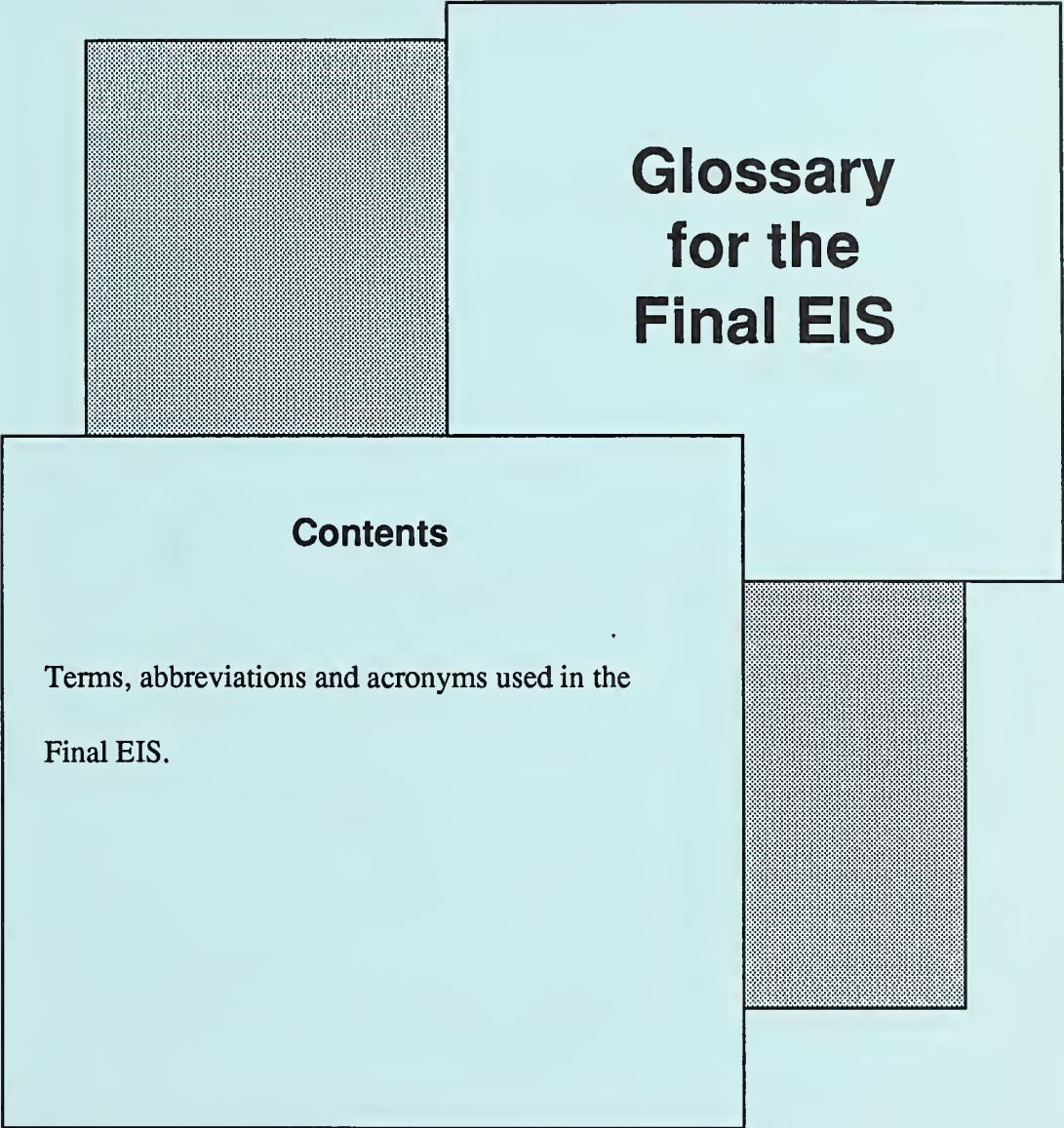
We appreciate your interest and cooperation in assisting the Service to fulfill the intent of the Section 7 process under the Act.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Charles H. Lobdell', with a large, stylized loop at the end.

Charles H. Lobdell
Field Supervisor

cc: FWS, Portland (Attn: AFWE)
FWS, Branch of Federal Activities, Washington, D.C.



Glossary for the Final EIS

Contents

Terms, abbreviations and acronyms used in the
Final EIS.

Glossary

Access - Ingress or egress across Public Land.

Accelerated erosion - Erosion, at a rate greater than normal, usually associated with human activities, that reduces plant cover and increases runoff.

Acre-foot - A measure of water or sediment volume equal to the amount that would cover an area of 1 acre to a depth of 1 foot (325,851 gallons).

Administrative unit - All the National Forest System lands under one Forest Supervisor 's responsibility.

Aesthetics - Resource uses for which market values (or proxy values) are not or cannot be established.

Airshed - A geographic area that, because of topography, meteorology, and climate, shares the same air. As applied to the National Forest by the Clean Air Act, amended August 1977, the term covers all wilderness areas larger than 5,000 acres that were in existence as of August 1977.

Alignment - The specific surveyed location or route.

All Weather facility - A facility capable of being operated during all weather conditions with only minor or short term restrictions.

Alternative - One of several policies, plans, or projects proposed for decision making.

Anadromous fish - Those species of fish that mature in the sea and migrate into streams to spawn; i.e., salmon, steelhead.

Aquatic ecosystems - The stream channel, lake or estuary bed, water itself, and the biotic communities that occur therein.

Arterial roads - Roads comprising the basic access network for National Forest System administrative and management activities. These roads serve all resource elements to a substantial extent, and maintenance is not normally determined by the activities of any one element. They provide service to large land areas and usually connect with public highways or areas or other Forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than by a specific resource management service. Usually, they are developed and operated for long-term land and resource management purposes and constant service.

Glossary

ATV - An all terrain vehicle - A two three or four wheel motorized vehicle capable of traveling on trails or cross country. Defined as less than 42 inches in width.

Average Daily Traffic - The average 24-hour volume, being total volume during a stated period divided by the number of days in that period. Unless otherwise stated, the period is one year.

Average design speed - The weighted average of the design speeds within a road section or road when there is more than one individual design speed. For roads with two-way traffic, it is the weighted two-way average.

Background (bg) - The visible terrain beyond the foreground and middleground where individual trees are not visible but are blended into the total fabric of the stand. (See "Foreground" and "Middleground.")

Base Course - The layer or layers of specified or selected material of designated thickness placed on a subbase or a sub grade to support a surface course.

Baseline - With respect to soils, the amount of erosion and sedimentation due to natural sources in the absence of human activity.

Baseline monitoring - Monitoring designed to characterize the existing condition of a resource and to determine trends.

Batholith - A large mass of intrusive igneous granite rock as in the case of the Idaho Batholith.

Benefit - Inclusive term to quantify the results of proposed activity, project or program expressed in monetary or nonmonetary terms.

Berm - A curb or dike constructed to control roadway runoff water.

Big game - Those species of large mammals normally managed as a sport hunting resource.

Big game winter range - The area available to and used by big game through the winter season.

Capital investment - Those associated with construction or development of improvements; includes road construction, reforestation, campground construction, range improvements, etc.

CEO - See "Council on Environmental Quality."

CFR - Code of Federal Regulations.

Closure - The administrative order restricting either location, timing, or type of use in a specific area.

Collector roads - Roads constructed to serve two or more elements but which do not fit into the other two categories (arterial or local). Construction costs of these facilities are prorated to the respective element served. These roads serve smaller land areas and are usually connected to a Forest arterial or public highway. They collect traffic from Forest roads or terminal facilities. The location and standard are influenced by both long-term

multi-resource service needs and travel efficiency. Forest collector roads are operated for constant service.

Colluvial - Gravity is the work force involved. Rock fragments and soil materials accumulating at the base of steep slopes.

Community lifestyles - The ways in which residents conduct their everyday routines and how the "way they live" is associated with the National Forest.

Constant service - A long-term road developed and operated for continuous or annual recurrent service. This could be a road continuously open or seasonally closed, usually with a gate.

Construction - The supervising, inspection, actual building and all expenses incident to the construction or reconstruction of a Forest Development transportation facility, including locating, surveying, mapping costs or rights-of-way, and elimination of hazards.

Cost - The negative or adverse effects or expenditures resulting from an action. Costs may be monetary, social, physical or environmental in nature.

Cost effectiveness - Achieving specified outputs or objectives under given conditions for the least cost.

Cost efficiency - The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit/cost ratios and rates-of-return may be appropriate.

Critical habitat - Areas designated by Secretary of the Interior or Commerce for the survival and recovery of federally listed threatened or endangered species.

Cultural resource - The remains of sites, structures, or objects used by humans in the past—historical or archaeological.

Culvert - A conduit or passageway under a road, trail or other obstruction.

Cumulative Impact (Effect) - The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7).

Design Criteria - All the major controls and/or services for which a given facility is designed.

Design Standard - A set of descriptive terms which summarize the essential characteristics of a facilities design. It may include the number of lanes, width of travel way, average design speed, ditch, shoulder, pavement, structure, etc.

Design Vehicle - A vehicle having physical and/or operational characteristics that determine the geometrical and structural design requirements of a facility.

Glossary

Design Volume - A traffic volume determined for use in design representing expected use of the road the design year.

Developed recreation (Dev-R) - Recreation that requires facilities that, in turn, result in concentrated use of an area. Examples of recreation areas are campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts, and buildings.

Developed recreation site - Relatively small, distinctly defined area where facilities are provided for concentrated public use; e.g., campgrounds, picnic areas, swimming areas.

Dispersed recreation (Dis-R) - A general term referring to recreation use outside the developed recreation site; this includes activities such as scenic driving, hunting, back-packing, and recreation in primitive environments.

Distance zone - One of three categories used in the Visual Management System to divide a view into near and far components. The three categories are: (1) foreground (fg), (2) middle ground (mg), and (3) background (bg).

District - See "Ranger District."

Draft Environmental Impact Statement - The statement of environmental effects which is required for major Federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review.

EA - An abbreviation of Environmental Assessment.

Effective ground cover - All vegetative material within 3 feet of the exposed soil surfaces as well as any additional litter, rock, and rock fragments that are in contact with the soil surface.

Effectiveness monitoring - Monitoring designed to determine if specific practices of projects were effective in meeting resource management objectives. On-site and in-stream evaluations are included.

Effects - Environmental consequences as a result of a proposed action. Included are direct effects, which are caused by the action and occur at the same time and place; and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in this statement are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial (40 CFR 1508.8).

EIS - An abbreviation of Environmental Impact Statement.

Endangered species - Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plants or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered

Species Act.

Environmental analysis - An analysis of alternative actions and their predictable short and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions.

Environmental Assessment (EA) - The concise public document required by the regulations for implementing the procedural requirements of NEPA (40 CFR 1508.9).

Environmental Impact Statement (EIS) - A statement of the environmental effects of a proposed action and alternatives to it. It is required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA) and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal.

Ephemeral streams - Streams that flow only as a direct response to rainfall or snowmelt events. They have no base flow.

Erosion - This includes processes of weathering, solution, corrosion, and transportation of earth and rock materials. Forces involved may be water, ice, wind, and gravity.

Family unit - A developed site or picnic spot with table, fireplace, tent pad, and parking spot designed to handle an average of 5 people at a time.

Federal Register - Published document that provides a uniform system for making available to the public regulations and legal notices issued by federal agencies.

Fee ownership - Ownership of property that has no limitation, qualification, or condition affecting it and is the maximum possible ownership in real estate under the system of property rights founded on English common law.

Fisheries habitat - Streams, lakes, and reservoirs that support fish.

Flood plains - The lowland and relatively flat area adjoining inland waters, including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Fluvial - Produced by or pertaining to rivers and streams.

Forage - All browse and non-woody plants that are available to livestock or wildlife for grazing or harvested for feeding.

Forest and Rangeland Renewable Resources Planning Act of 1974 - An Act of Congress requiring the preparation of a program for the management of the National Forests' renewable resources and of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all National Forest System lands and renewable resources.

Foreground (fg) - A term used in visual management to describe the stand of trees immediately adjacent to the high-value scenic area, recreation facility, or forest highway. See "Background" and "Middleground."

Forest development roads - A legal term for Forest roads that are under the jurisdiction of

Glossary

the Forest Service.

Forest development trails - As defined in 36b CFR 212.1 and 261.2 (FSM 1023.4), those trails wholly or partly within or adjacent to and serving, the National Forests and other areas administered by the Forest Service that have been included in the Forest development transportation plan.

Forest development transportation system - Those facilities, forest development roads, trails, and airfields, in the transportation network and under Forest Service jurisdiction. (See FSM 7710.5 and FSM 7711.)

Forest Highway - A forest road under the jurisdiction of, and maintained by, a public authority and open to public travel.

Forest roads - A road wholly or partly within, or adjacent to, and serving the National Forest System and is necessary for the protection, administration, and use of the National Forest System and the use and development of its resources (23 USC 101).

Forest Supervisor - The official responsible for administering the National Forest System lands in a Forest Service administrative unit, which may consist of two or more National Forests or all the Forests within a state. He reports to the Regional Forester.

FSH - Forest Service Handbook.

FSM - Forest Service Manual.

Goal - A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.

Goods and services - The various outputs, including on-site uses, produced from forest and rangeland resources.

Granitic - Pertaining to relatively coarse-grained, light-colored rocks, composed chiefly of varying amounts of quartz and feldspar with relatively low amounts of dark-colored minerals.

Ground cover (effective) - All vegetative material within 3 feet of the exposed soil surface as well as any additional litter, rock, and rock fragments that are in contact with the soil surface.

Guideline - An indication or outline or policy or conduct; i.e., any issuance that assists in determining the course of direction to be taken in any planned action to accomplish a specific objective.

Habitat - The place where a plant or animal naturally or normally lives or grows.

Habitat capability - The established capability of a habitat to produce wildlife or fish species.

Habitat for fishable populations - The quality of fish habitat capable of producing long-term stability in populations, plus an additional number of adults that can be harvested on a sustained basis by anglers. The populations, to be indicative of habitat quality, must be of natural origin, having not been supported by hatchery spawning or rearing. The

definition demands that the “fishable population” would continue even in the absence of any hatchery program.

Hazardous Materials - Materials and quantity of materials, as defined in 40 CFR 172, determined to be hazardous to life.

Implementation - Those activities necessary to respond to the approved Land and Resource Management Plan.

Implementation monitoring - Monitoring designed to determine whether plans and prescribed practices have been implemented as proposed.

Interdisciplinary approach - The utilization of individuals representing two or more areas of knowledge and skills focusing on the same task, problem, or subject. Team member interaction provides necessary insight to all stages of the process.

Intermittent streams - A stream which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas.

Intermountain Region - That part of the National Forest System which encompasses National Forests within the Intermountain Region (Utah, southern and central Idaho, western Wyoming, and Nevada).

Interpretive services - Visitor information services designed to present educational and recreational values to Forest visitors to enhance their understanding, appreciation, and enjoyment of the Forest.

Interpretive site - A developed site at which a broad range of natural or cultural history is interpreted or discussed for the enjoyment of the public.

Inventory data and information collection - Recorded measurements, facts, evidence, or observations on Forest resources such as soil, water, timber, wildlife, range, geology, minerals, and recreation which were used to determine the capability and opportunity of the Forest to be managed for those resources.

Irretrievable - Applies to losses of production, harvest, or commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

Irreversible - Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options.

Issue - A point, matter, or question of public discussion or interest to be addressed or decided through the planning process.

Jurisdiction - The legal right to control or regulate use of a transportation facility. Jurisdiction requires authority, but not necessarily ownership. The authority to construct or maintain a road may be derived from fee title, an easement, an agreement, or some other similar method.

Glossary

Local roads - Roads constructed and maintained for, and frequented by, the activities of a given resource element. Some use may be made by other element activities, but normally maintenance is not affected by such use. These roads connect terminal facilities with Forest collector or Forest arterial roads or public highways. The location and standard are usually determined by the requirements of a specific resource activity rather than by travel efficiency. Forest local roads may be developed and operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility.

Long Term Sediment - Eroded material which reaches the stream more than 5 years after the causative activity.

Mainstream monitoring - Monitoring designed to evaluate the cumulative effect of management activities on the downstream environment. This activity involves monitoring of higher order streams with emphasis on sediment storage and routing, and habitat characteristics.

Maintenance - The upkeep of the entire forest development transportation systems facilities including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization.

Management action - Any activity undertaken as part of the administration of the Forest.

Management direction - A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

Management Indicator Species (MIS) - A species selected because its population changes indicate effects of management activities on the plant and animal community. A species whose condition can be used to assess the impacts of management actions on a particular area.

Mass erosion (also mass-wasting) - Movement of large masses of earth materials in response to gravity, either slowly or quickly. This includes, slumps - rotation of a soil block with small lateral displacement, debris avalanches - rapid, shallow movement of soil mantle and rock fragments, landslides - sudden down-slope movement of earth and rock, and soil creep - slow, gradual, more or less continuous permanent deformation of soil under gravitational stress.

Middleground (mg) - The visible terrain beyond the foreground where individual trees are still visible but do not stand out distinctly from the stand. (See "Foreground" and "Background.")

Mitigation - Actions to avoid, minimize, reduce, eliminate, or rectify the impact of a management practice.

Monitoring and evaluation - The periodic evaluation on a sample basis of Forest Plan management practices to determine how well objectives have been met and how closely management standards have been applied.

National Environmental Policy Act (NEPA) - An Act to declare a National policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the Nation and to establish a Council on

Environmental Quality.

National Forest Land and Resource Management Plan - A Plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and establishes management standards and guidelines for the National Forest System lands of a given National Forest.

National Forest landscape management system - The art and science of planning and administering the use of Forest lands in such ways that the visual effects maintain or upgrade man's psychological welfare. It is the planning and design of the visual aspects of multiple-use land management.

National Forest Management Act (NFMA) - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development.

National Forest System (NFS) lands - National Forests, National Grasslands, or purchase units, and other lands under the management of the Forest Service, including experimental areas and Bankhead-Jones Title III lands.

National Register of Historic Places - A listing (maintained by the U.S. National Park Service) of areas which have been designated as being of historical significance. The Register includes places of local and state significance as well as those of value to the Nation.

Natural erosion - The erosion process, on a given land form, that is not associated with the activities of man. Natural erosion delivered downstream results in what is referred to as natural sediment yield.

Natural or Inherent Capability of Fish Habitat - Habitat which fluctuates normally about some central tendency, based solely on "acts of God".

NEPA - An abbreviation for the National Environmental Policy Act.

NFMA - An abbreviation for National Forest Management Act.

NFS - An abbreviation of National Forest System.

No action alternative - The most likely condition expected to exist in the future if current management direction were to continue unchanged.

Nonconsumptive use - That use of a resource that does not reduce the supply. For example, nonconsumptive use of water includes hydroelectric power generation, boating, swimming, and fishing.

Nonpoint Source Pollution - Diffuse sources of water pollution that originate from many indefinable sources and normally include urban runoff, runoff from construction, mining, agricultural, and silvicultural activities, etc. In practical terms, nonpoint sources do not discharge at a specific, single location (such as a single pipe). Nonpoint source pollutants are generally carried over or through the soil and ground cover via storm-flow processes. Unlike point sources of pollution (such as industrial and municipal effluent discharge pipes), nonpoint sources are diffuse and can come from any land area.

Glossary

Objective - A concise, time-specific statement of measurable planned results that respond to preestablished goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

On-site monitoring - Monitoring designed to evaluate the implementation and effectiveness of management practices at the site of activity.

Operational costs - Those costs associated with administering and maintaining National Forest facilities and resource programs.

Outputs - The goods, services, products, and concerns which are measurable and capable of being used to determine the effectiveness of programs and activities in meeting objectives. Goods, end products, or services that are purchased, consumed, or utilized directly by people. A broad term for describing any result, product, or service that a process or activity actually produces.

Parent material - The unconsolidated mass of material from which the soil profile develops.

Policy - A guiding principle which is based on a specific decision or set of decisions.

Practices - Those management activities that are proposed or expected to occur.

Predator - One that preys, destroys, or devours—usually an animal that lives by preying on other animals.

Preferred alternative - The alternative recommended for implementation in the Forest Plan.

Primitive recreation (P) - Those recreation activities which occur in areas characterized by an essentially unmodified natural environment of fairly large size.

Projects - Work schedule prescribed for a project area to accomplish management prescriptions. Projects can be for operation maintenance and protection (OMP) or for investment purposes. OMP projects are for ongoing work and are generally considered 1 year at a time. Investments can be of multiyear duration. A project is organized for managerial convenience, and is described by location, activities, outputs, effects, work force, dollars, time, and responsibility for execution.

Project monitoring - Monitoring designed to evaluate the implementation of practices and projects and to determine if they were effective in meeting resource management objectives.

Proposed action - In terms of the National Environmental Policy Act, the project, activity, or decision that a Federal agency intends to implement or undertake.

Public access - Usually refers to a road or trail route over which a public agency claims a right-of-way for public use.

Public issue - A subject or question of widespread public interest relating to management of the National Forest System.

Public participation - Meetings, conferences, seminars, workshops, tours, written

comments, responses to survey questionnaires, and similar activities designed and held to obtain comments from the public about Forest Service planning.

Public roads - Any road under the jurisdiction of and maintained by a public authority that is "open to public travel" (23 USC, Sec. 101(a)).

Quad maps - Standard U.S. Geological Survey quadrangle maps.

Ranger District - Administrative subdivisions of the Forest supervised by a District Ranger who reports to the Forest Supervisor.

Record of Decision - A document separate from but associated with an Environmental Impact Statement that publicly and officially discloses the responsible official's decision on which alternative assessed in the Environmental Impact Statement to implement.

Recreation Information Management (RIM) - The Forest Service system for recording recreation facility condition and use.

Recreation opportunity - Availability of a real choice for a user to participate in a preferred activity within a preferred setting, in order to realize those satisfying experiences which are desired.

Recreation Opportunity Spectrum (ROS) - A method of measuring the ability of the Forest land to meet the various types of demands imposed by a variety of recreation uses.

Recreation visitor day (RVD) - Twelve visitor hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons.

Redd - A fish nest. The depression in a stream a fish will build to lay and hatch eggs.

Region - For Regional planning purposes, the standard administrative Region of the Forest Service, administered by the official responsible for preparing a Regional Guide.

Regional Forester - The official responsible for administering a single Region.

Regulations - Generally refers to the Code of Federal Regulations, Title 36, Chapter II, which covers management of the Forest Service.

Resident fish - Generally refers to trout and char which are not anadromous; however, some forest reservoirs contain warm water resident fish species such as bass. Associated with trout and char are whitefish, suckers, sculpins, and other coldwater species.

Responsible official - The Forest Service employee who has been delegated the authority to carry out a specific planning action.

Restriction - Precluding use of various types of vehicles or traffic for specified time periods less than one year in duration.

Revegetation - The re-establishment of a plant cover with 85% or more density, either naturally or by manually seeding.

Right-of-way - An accurately located strip of land with defined width, point of beginning, and point of ending. It is the area within which the user has authority to conduct operations approved or granted by the landowner in an authorizing document, such as a permit, easement, lease, license, or Memorandum of Understanding (MOU).

Glossary

RIM - An abbreviation of Recreation Information Management.

Riparian - Areas of land that are directly influenced by water. They usually have visible vegetative or physical characteristics reflecting this water influence. Stream sides, lake borders, or marshes are typical riparian areas.

Riparian areas - Management zones that combine the ecologic concerns of riparian ecosystems with the soil and hydrologic concerns of floodplains and streamside slopes. Riparian areas include all aquatic ecosystems, riparian ecosystems and associated floodplains. Riparian areas are defined as those areas with soil, water and vegetation components requiring abundant water, and saturated soil conditions for part of the year to support hydrophilic (water-loving) plant life. They are most commonly associated with surface waters, such as perennial and intermittent streams, wet meadows, wetlands, springs, seeps, bogs and lakes.

Riparian ecosystems - Consist of the area of transition between the aquatic ecosystem and the adjacent terrestrial ecosystem and identified by soil characteristics and distinctive vegetation communities that require free or unbound water. Examples of these vegetative communities are willow, alder, red-osier dogwood, cattail, horsetail, etc. Riparian ecosystems include wetlands and some intermittent and ephemeral streams.

Road -

A. Any imprint on the land made for or by a four wheeled vehicle over 40 inches in width that will exist for longer than one year.

B. A general term denoting a way for purposes of travel by vehicles greater than 40 inches in width. (FSM 7721.15c) Includes only the area occupied by the road surface and cut and fill slopes. (FSM 2353.05)

Road Bed - The portion of the road between the intersection of the subgrade and side slopes, excluding that portion of the ditch below the subgrade.

Road Functional Classes (FSH 7709.16) -

Arterial Roads - provide service to large land areas and usually connect with other arterial roads or public highways.

Collector Roads. intermediate links. They connect major heavily traveled multiple purpose arterial routes and single resource local roads.

Local Roads. connect terminal facilities such as log landings and recreation sites with Forest collector or arterial roads or with public highways. Usually single purpose.

Road maintenance levels - Levels are described as follows:

- Level 1. Road normally closed to vehicle traffic.
- Level 2. Road open for limited passage of traffic but not normally suitable for passenger cars.
- Level 3. Road open for public traffic including passenger cars, but may not be smooth or comfortable.
- Level 4. Road suitable for all types of vehicles, generally smooth to travel, and dust may be controlled.

Level 5. Road is smooth and dust free, and the surface is skid resistant if paved.

Road Reconstruction - The investment in construction activity that results in betterment, restoration, or in the realignment of a road.

Road maintenance - Expenditures in the minor restoration and upkeep of a road necessary to retain the road's approved traffic service level.

Roaded natural (RN) - A classification of the recreation opportunity spectrum that characterizes a predominately natural environment with evidence of moderate permanent alternate resources and resource utilization. Evidence of the sights and sounds of man is moderate, but in harmony with the natural environment. Opportunities exist for both social interaction and moderate isolation from sights and sounds of man.

Road Way - The portion of a road within the limits of excavation and embankments.

ROS - An abbreviation of Recreation Opportunity Spectrum.

Route Reclamation - Effectively eliminating access, reestablishing vegetative cover, and providing adequate drainage.

Runoff - The excess water that flows away over the surface of a land area.

Roaded modified (RM) - A recreation opportunity spectrum classification for areas characterized by a substantially modified natural environment. Sights and sounds of man are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection.

Scenic areas - Places of outstanding or matchless beauty which require special management to preserve these qualities. They may be established under 36 CFR 294.1 whenever lands possessing outstanding or unique natural beauty warrant this classification.

Scoping process - A continuing process throughout the environmental analysis for planning and management activities. It may involve a series of meetings, telephone conversations, or written comments from different interested groups.

Security area - Habitat which, because of its size, topography, and vegetation, is capable of holding animals during periods of stress. The size of area varies with the combination of space and hiding cover necessary for animals to be psychologically secure in relation to the degree of human access.

Sediment - Any solid material (mineral and organic) that has been moved to a water body and is being transported or has been deposited.

Bedload. Sediment that moves by sliding, rolling or bounding on or very near the streambed. Moves at velocities less than the surrounding flows.

Suspended. Sediments suspended in water by the upward components of turbulent currents or by colloidal suspension.

Sediment yield - The total sediment outflow from a drainage basin in a specified period of time. It includes bedload as well as suspended load, and is expressed in terms of mass, or volume per unit of time. The standard unit of expression for our purpose is tons/square mile/year.

Glossary

Semi-primitive motorized (SPM) - A classification of the recreation opportunity spectrum characterized by a predominately unmodified natural environment in a location that provides good to moderate isolation from sights and sounds of man except for facilities/travel routes sufficient to support motorized recreational travel opportunities which present at least moderate challenge, risk, and a high degree of skill testing.

Semi-primitive nonmotorized (SPNM) - A classification of the recreation opportunity spectrum characterized by a predominately unmodified natural environment of a size and location that provides a good to moderate opportunity for isolation from sights and sounds of man. The area is large enough to permit overnight foot travel within the area, and presents opportunity for interaction with the natural environment with moderate challenge, risk, and use of a high degree of outdoor skills.

Sensitive species - Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alternations.

Sensitivity level - A particular degree of measure of viewer interest in scenic qualities of the landscape. Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment:

- Level 1 - Highest sensitivity
- Level 2 - Average sensitivity
- Level 3 - Lowest sensitivity

Service Life - The length of time a facility is expected to provide a specified service.

Short Term Sediment - Sediment which reached the stream within 5 years of the causative activity.

Shoulder - The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of pavement structure.

Slash - The residue left on the ground after timber cutting and/or accumulation as a result of storm, fire, or other damage. It includes unused logs, uprooted stumps, broken or uprooted stems, branches, twigs, leaves, bark, and chips.

Slope slump - A slide or earthflow of a soil mass.

Social disruption - The disruption or breaking up of people's lives, especially in their dealings with each other.

Soil - A dynamic natural body on the surface of the earth in which plants grow, composed of mineral and organic materials and living forms.

Soil and Water Conservation Practices (SWCP) - The set of practices which, when applied during implementation of a project, ensures that soil productivity is maintained, soil loss and water quality impacts are minimized, and water related beneficial uses are protected. These practices include the following: (1) State recognized Best Management Practices, (2) Forestwide standards and guidelines (3) Management Area standards and guidelines, and (4) practices identified at the area and project levels based on-site specific evaluation.

Soil compaction - Reduction of soil volume which results in alteration of soil, chemical,

and physical properties.

Soil productivity - The inherent capacity of a soil to support growth of specified plants, plant communities, or sequence of plant communities.

Soil profile - A progression of distinct layers of soil from the surface to bedrock.

Soil resource commitment - A conversion of a productive site to an essentially nonproductive site for a period of more than 50 years.

Soil surveys - Systematic examinations of soils in the field and in laboratories; such examinations are at differing "orders" and interpretation according to their adaptability for various crops, grasses, and trees; there are five classed orders of surveys, with order 1 being the highest intensity through order 5 (lowest intensity).

Soil texture - The relative amounts of the various size classes of soil particles, such as sand, silt, and clay.

Special Use Permit - A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

Spring break-up - The time of year when roads break up due to melting frost and ice, generally from the first of March to the middle of April.

Standard and Guideline - A principle requiring a specific level of attainment, a rule to measure against; a mandatory requirement.

Stream - A water course having a distinct natural bed and banks; a permanent source which provides water at least periodically; and at least periodic or seasonal flows at times when other recognized streams in the same area are flowing.

Subbase - The layer or layers of specified or selected material of designated thickness placed on a subgrade to support a base course.

Subgrade - Top surface of roadbed upon which subbase, basecourse, or subsurface course is constructed.

Surface Course - The top layer of a pavement structure, sometimes called the wearing course, usually designed to resist skidding, traffic abrasion, and the disintegrating effects of climate.

Subsoil - That part of the soil profile commonly below the surface horizon and above the parent material.

Suppression - An act extinguishing or confining fire.

Surface erosion - The wearing away of the land surface by running water or wind. This includes: sheet erosion, the removal of a surface soil by runoff water; rainsplash erosion, the spattering of small soil particles caused by the impact of raindrops on the soil surface; and rill and gully erosion.

Surface resources - Renewable resources located on the earth's surface in contrast to ground water and mineral resources located below the earth's surface.

Glossary

Surface soil - That part of the soil profile that includes the surface and first (A) horizon (generally 4 to 10 inches).

Sustained yield of products and services - The achievement of maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest without impairment of the productivity of the land.

Threatened species - Those plant or animal species likely to become an endangered species throughout all or a significant portion of their range within the foreseeable future.

Tiering - Refers to the coverage of general matters in broader Environmental Impact Statements (such as National program or policy statements) with subsequent narrower statements or environmental analyses (such as Regional or Basin-wide program statements or ultimately site-specific statements) incorporating, by reference, the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

Toxic Materials - Hazardous Materials which are toxic to fish.

Trail - A general term denoting a way for purposes of travel by foot, stock, or trail vehicle with a wheelbase width of 40 inches wide or less.

Travel Way - The portion of the roadway for the movement of vehicles, exclusive of shoulders, ditches and auxiliary lanes.

Turnout - A short auxiliary lane on a one-lane road provided for the passage of meeting vehicles.

Vegetative management - Activities designed primarily to promote the health of the Forest cover for multiple-use purposes.

Visitor Information Service (VIS) - Activities which interpret for visitors, in layman's language, Forest management, protection, utilization, and research. It also includes interpreting the local botany, geology, ecology, zoology, history, and archaeology.

Visual Quality Objective (VQO) - Categories of acceptable landscape alteration measured in degrees of deviation from the natural appearing landscape.

Retention (R). Ecological change only here.

Partial Retention (PR). Human activities should not be evident to the casual Forest visitor.

Modification (M). Human activity may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Maximum Modification (MM). Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

Enhancement. A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.

Visual resource - The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

VOQ - An abbreviation of visual quality objective.

Water Quality - Refers to a set of chemical, physical, or biological characteristics that describe the condition of a river, stream, or lake. The quality of water determines which beneficial uses it can support. Different in-stream conditions or levels of water quality are needed to support different beneficial uses.

Watershed - The entire land area that contributes water to a drainage system or stream.

Watershed Condition - As used in this document refers to the health of a watershed in regards to such factors as soil productivity, slope integrity, riparian area and stream channel conditions.

Watershed Improvement - The treatment of deteriorated areas in watersheds with a combination of mechanical, vegetative, structured or other protective measures to achieve satisfactory hydrologic function and maintain soil productivity. A watershed improvement needs inventory is maintained by the Forest that identifies the backlog of existing acres in need of some form of treatment.

Wetlands - Areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances, does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

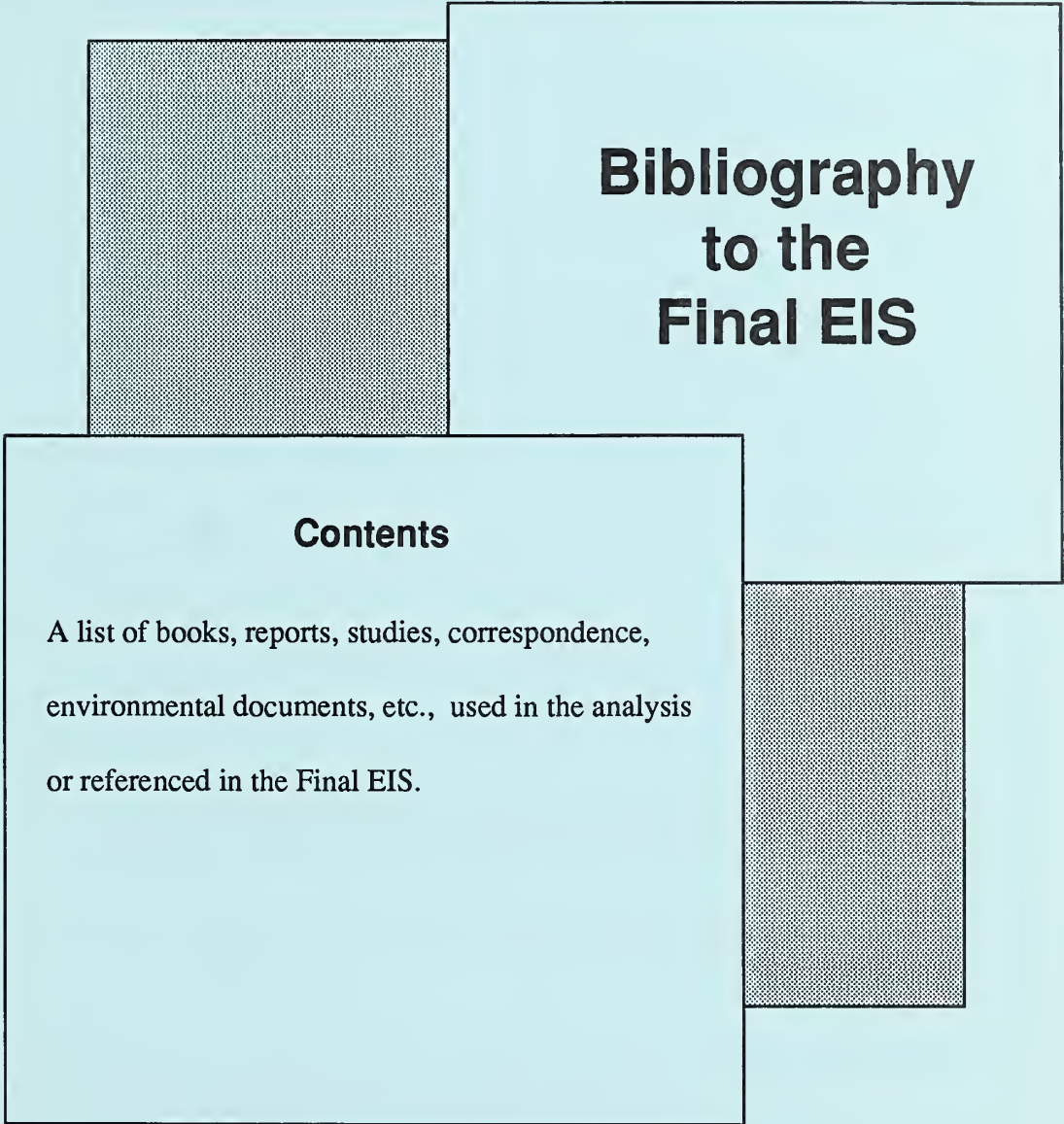
Wild and Scenic River - Rivers included in the National Wild and Scenic Rivers System shall be free-flowing streams which possess outstandingly remarkable scenic, recreational, geological, fish and wildlife, historic, cultural and other similar values.

Wilderness - Areas designated by congressional action under the 1964 Wilderness Act. Wilderness is defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature with the imprint of man's activity substantially unnoticeable; have outstanding opportunities for solitude or a primitive and unconfined type of recreation; include at least 5,000 acres or is of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.

Wildfire - Any wildland fire not designated and managed as a prescribed fire within an approved prescription.

Winter range - See "Big game winter range."

Withdrawal - An order removing specific land areas from availability for certain uses.



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A list of books, reports, studies, correspondence,
environmental documents, etc., used in the analysis
or referenced in the Final EIS.

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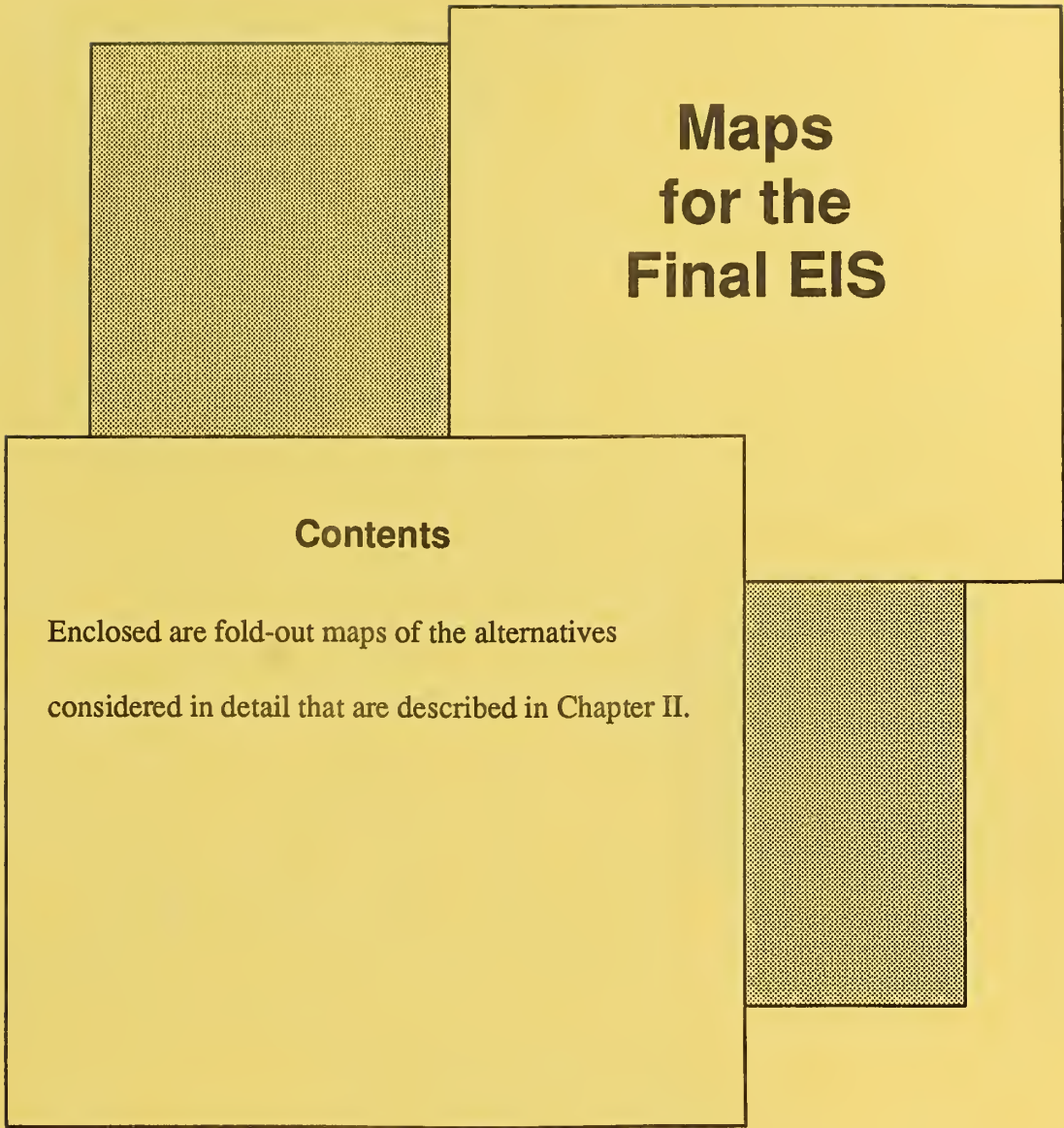
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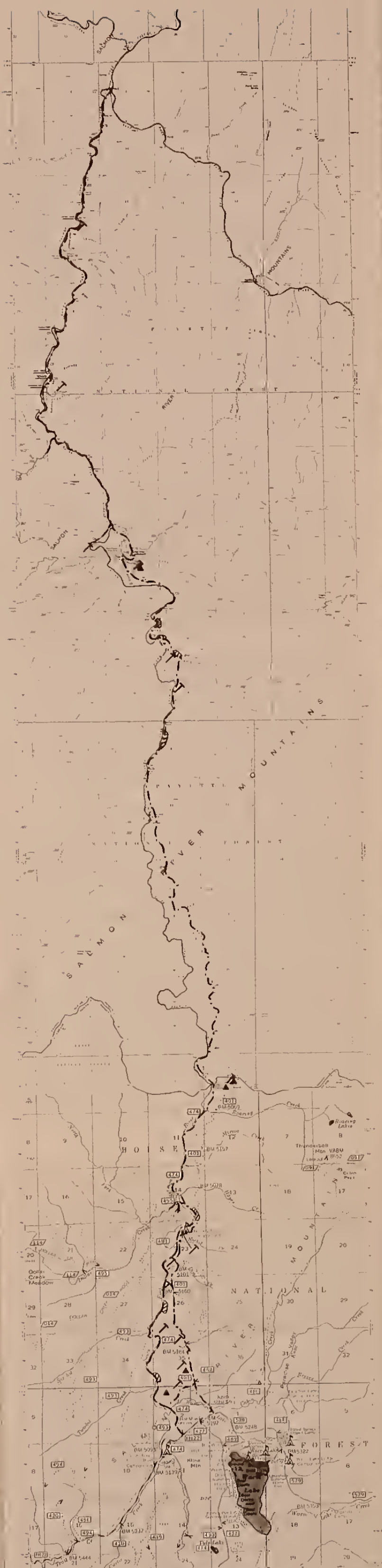


Maps for the Final EIS

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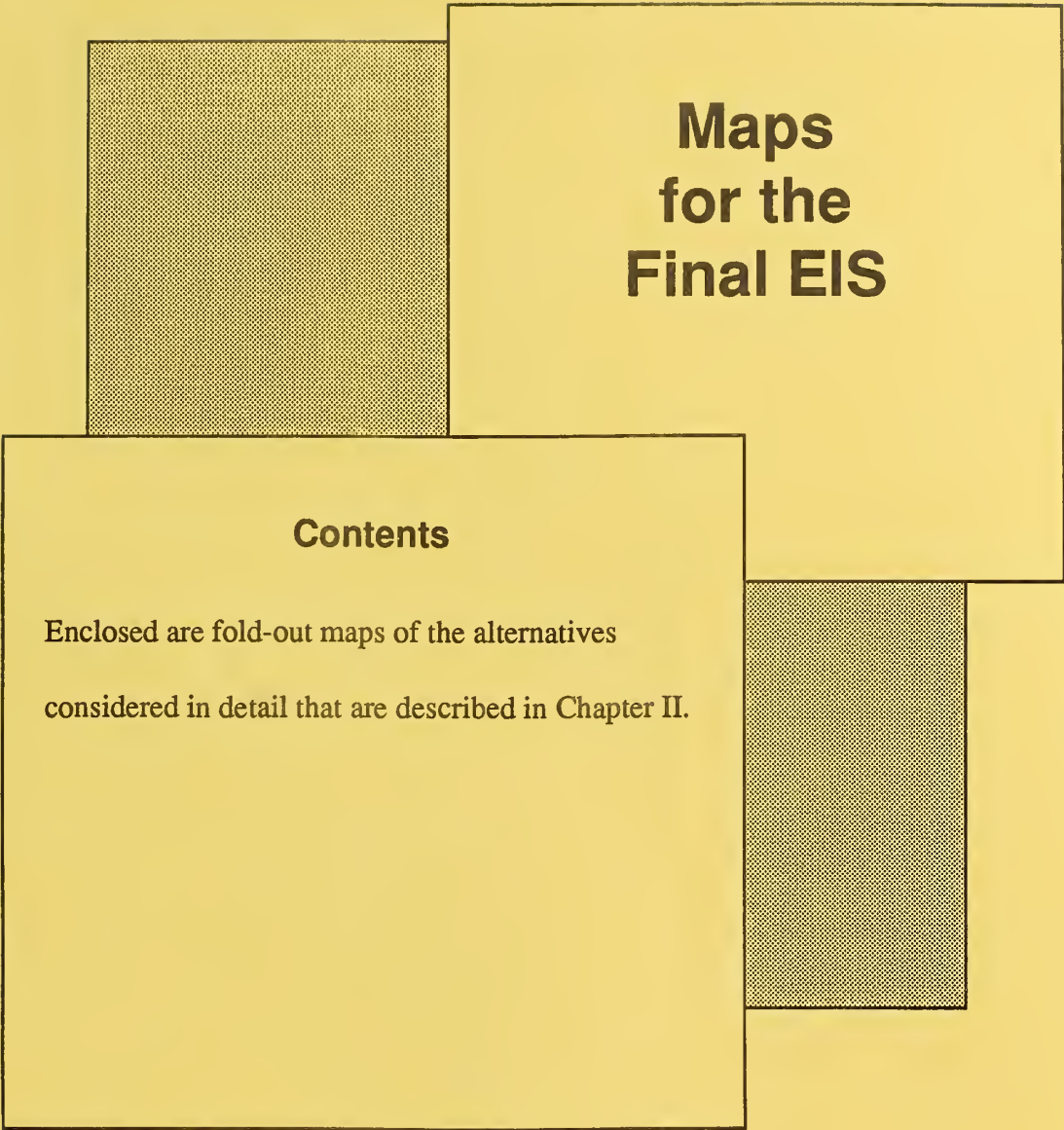
Enclosed are fold-out maps of the alternatives
considered in detail that are described in Chapter II.





Alternative RA

- Asphalt surface
- Native surface
- Road converted to trail
- ▲ Gravel and rock pits
- ▭ Major slope treatment area
- ▲ Probable work sites

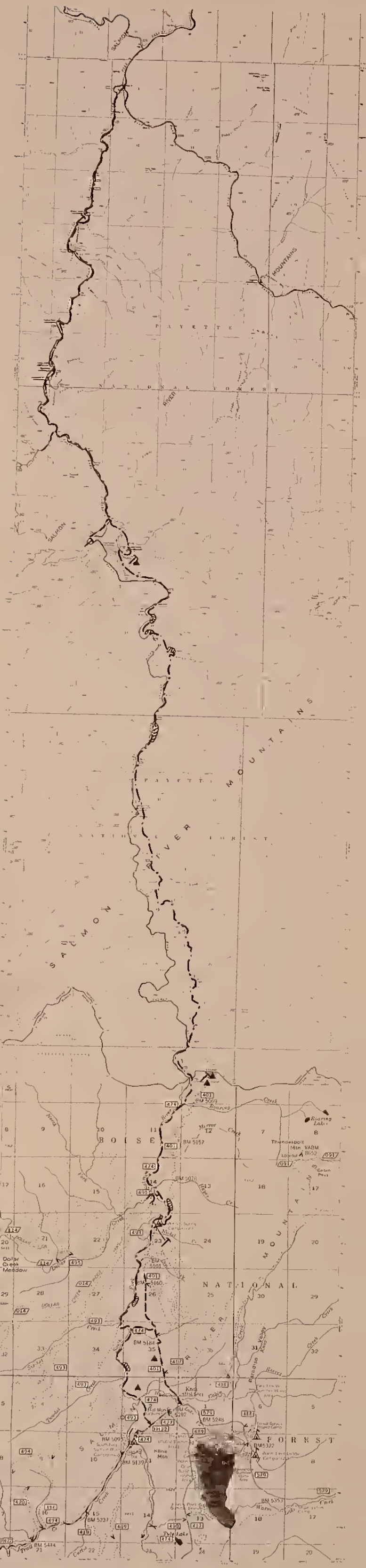


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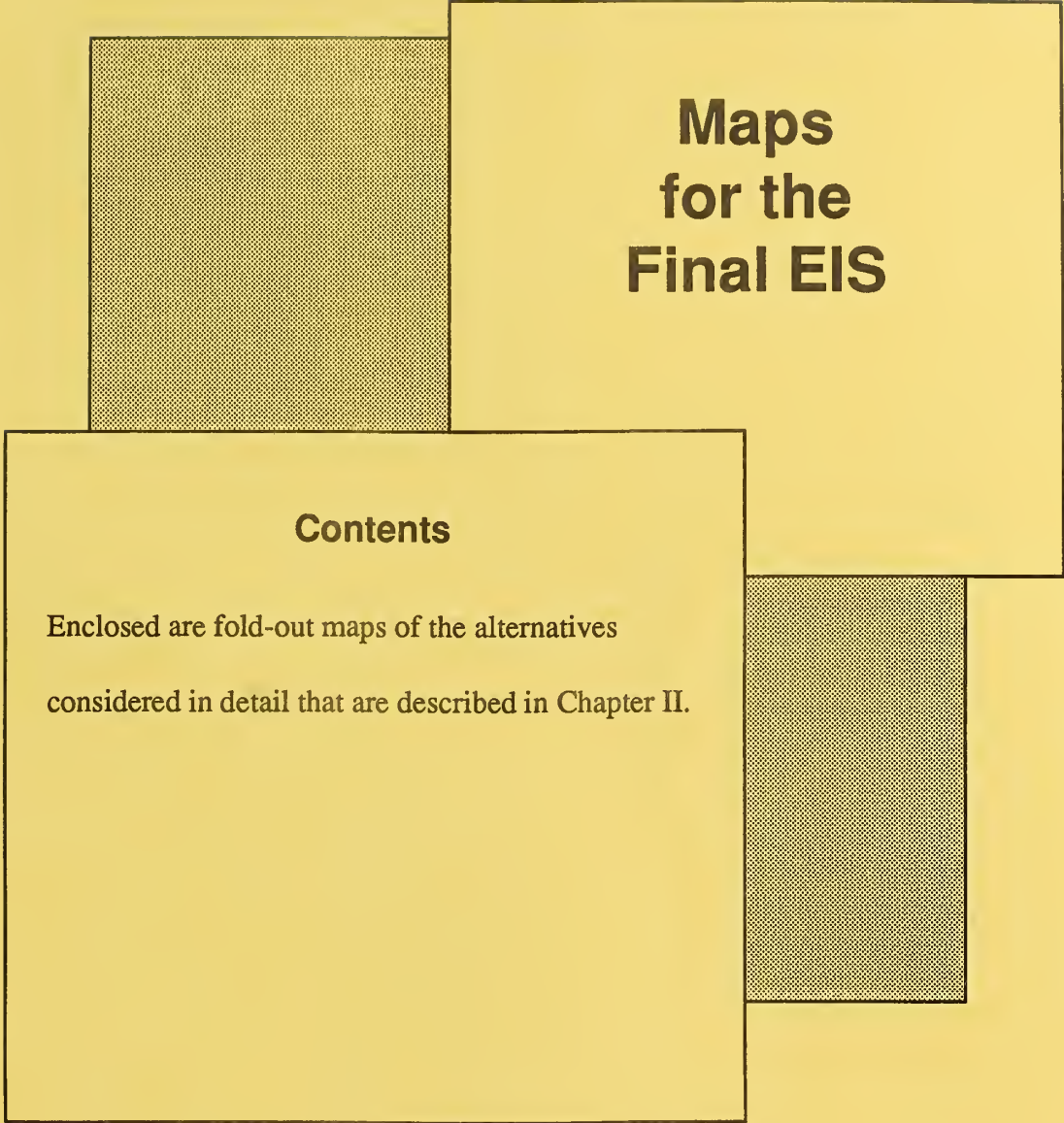
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- Native surface
- ▲ Gravel and rock pits
- Major slope treatment area
- ▲ Probable work sites

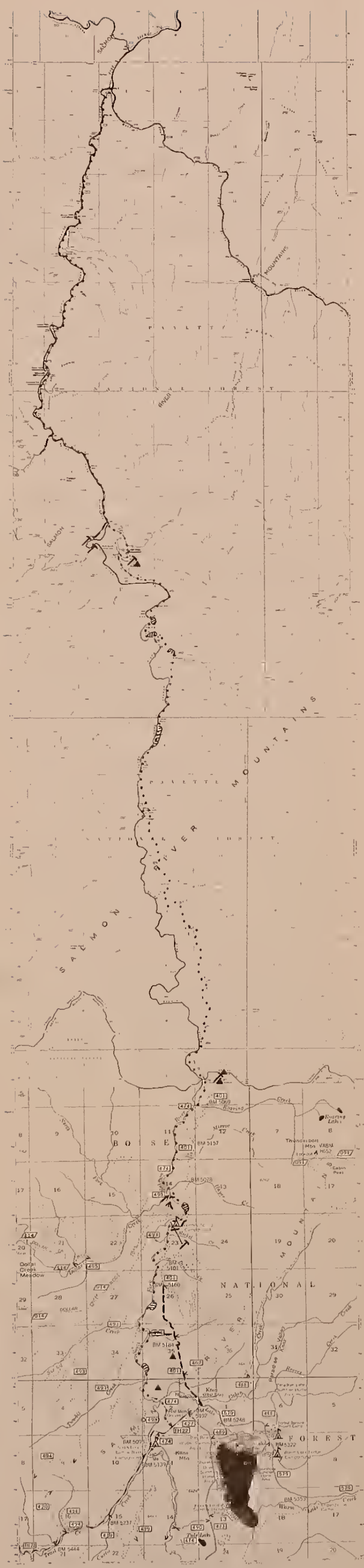


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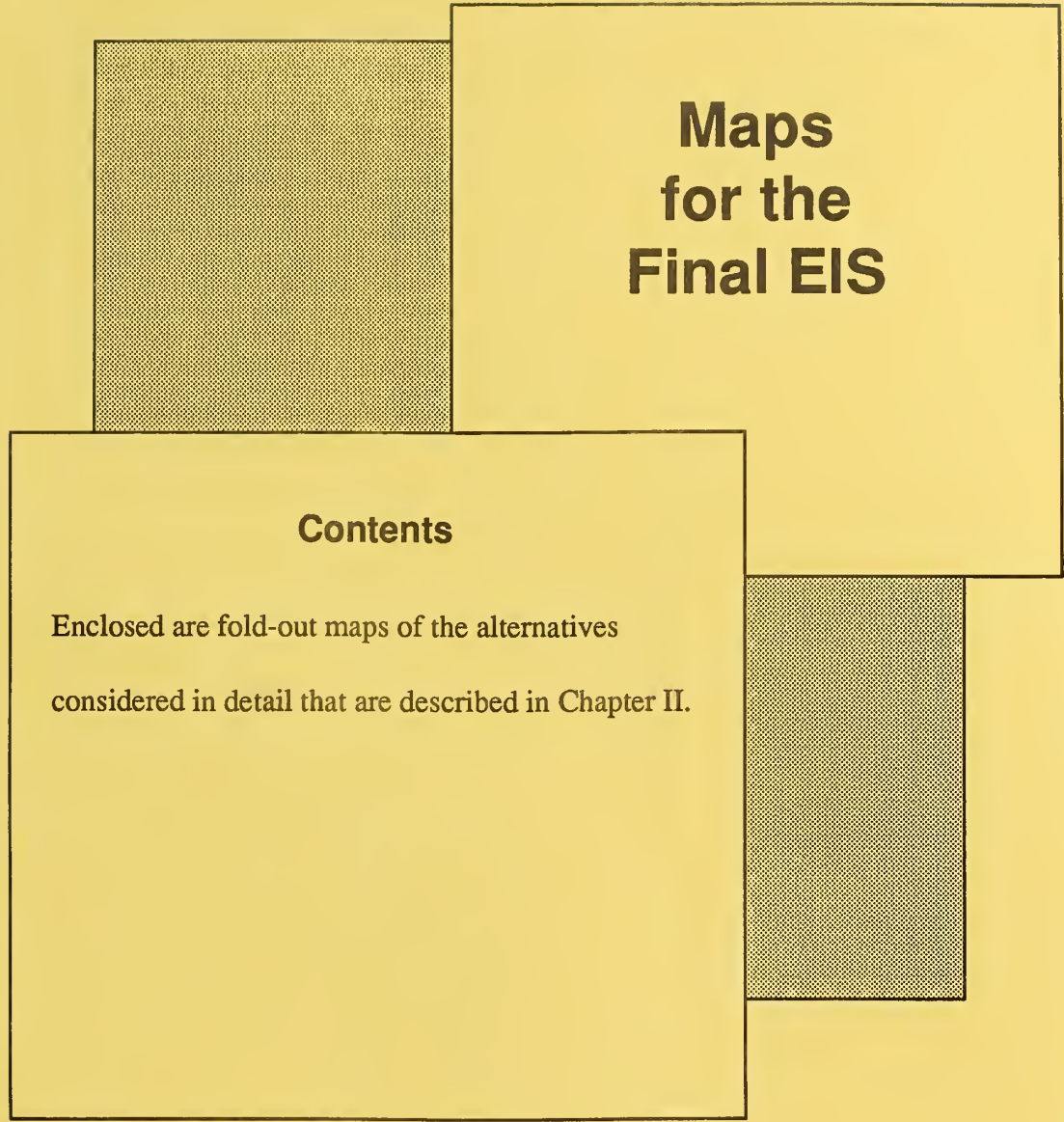
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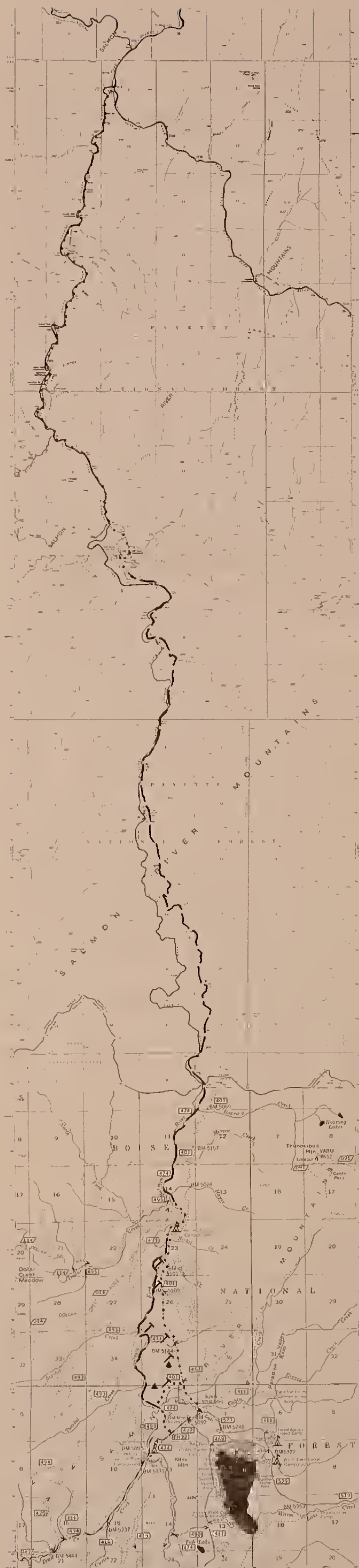
- Gravel surface
- Native surface
- Gravel and rock pits
- ⊗ Major slope treatment area
- ▲ Probable work sites



Maps for the Final EIS

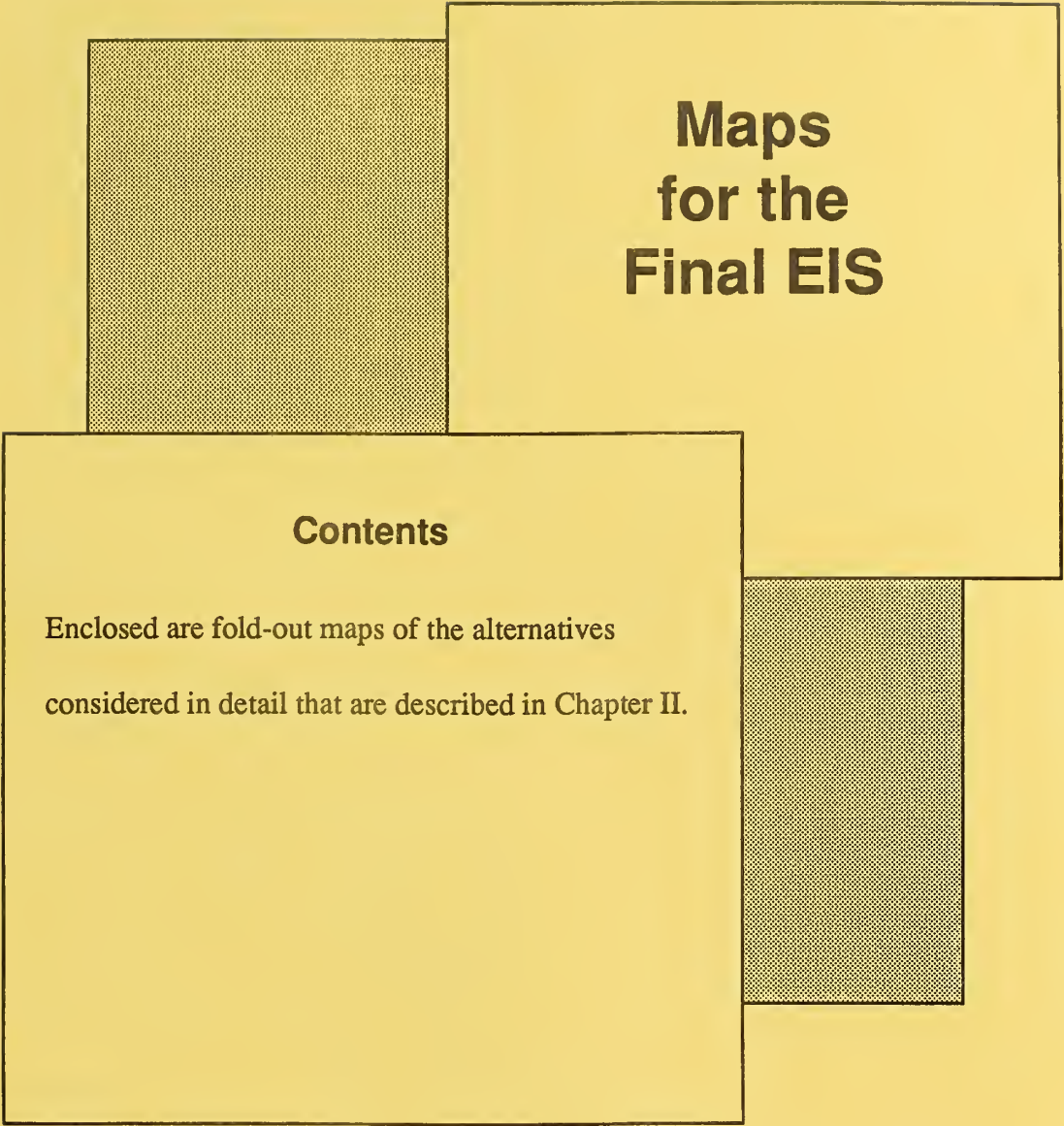
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Alternative NAFP

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- Road converted to trail
- Gravel and rock pits
- ▲ Probable work site

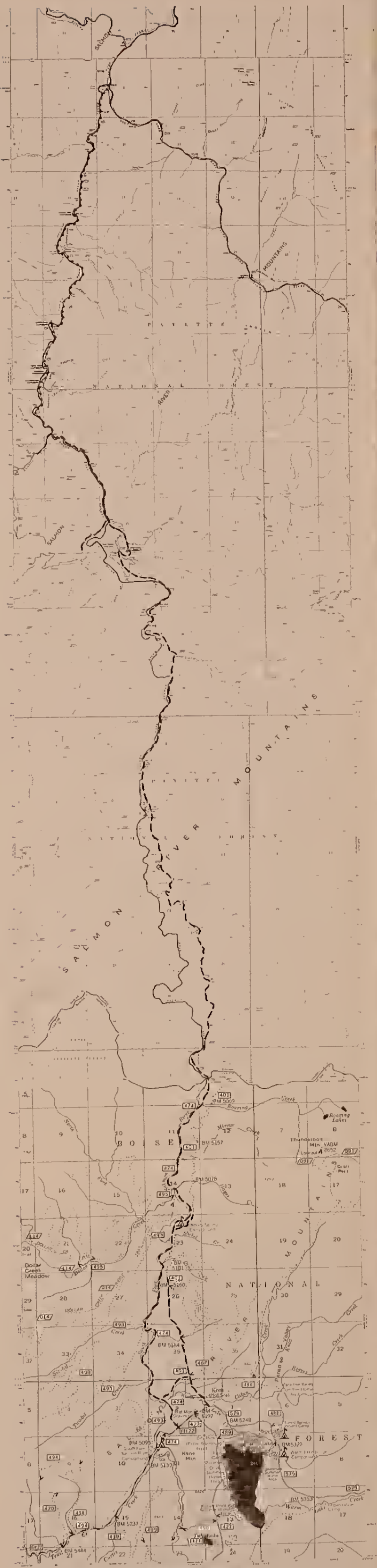


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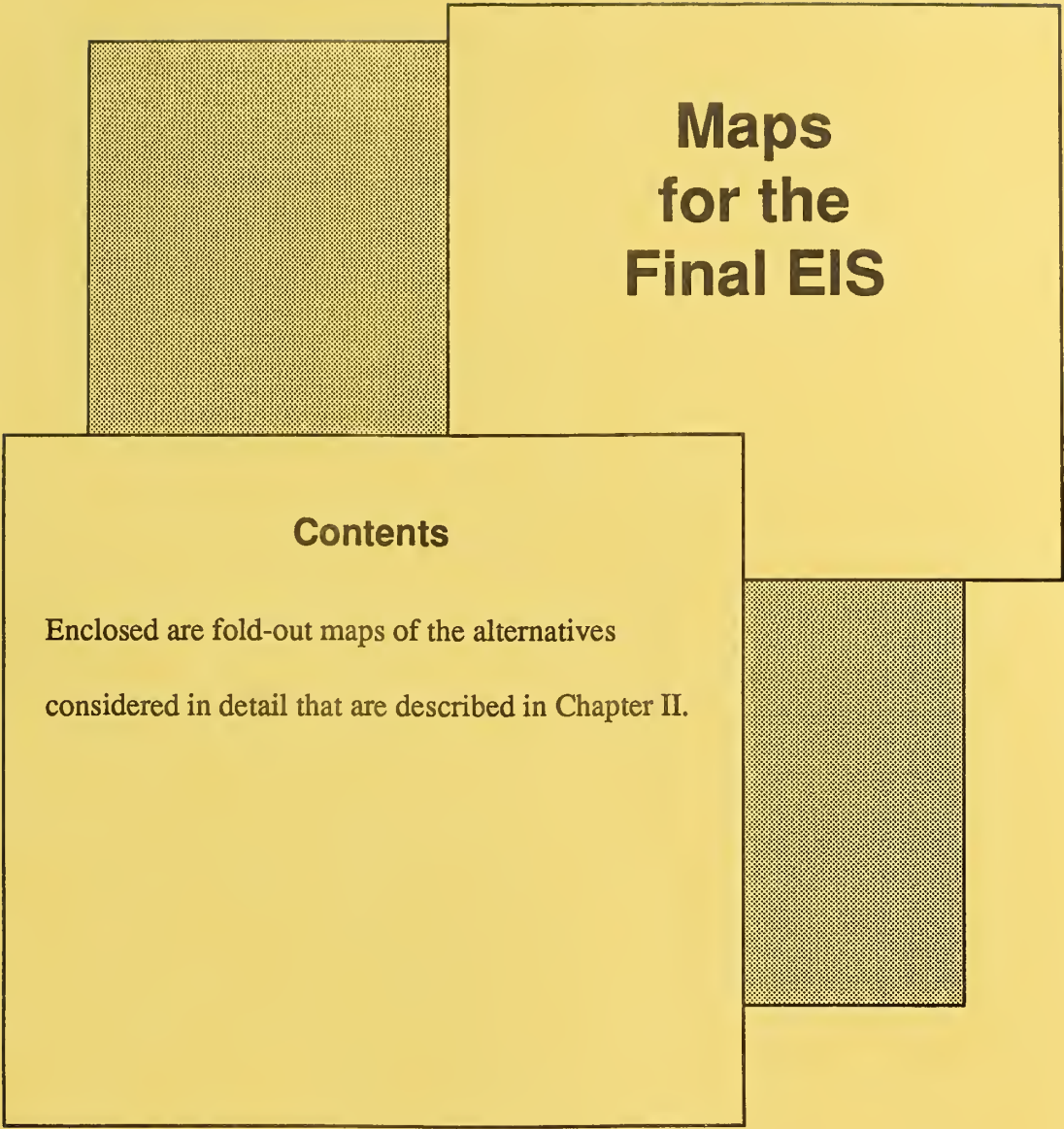
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Alternative NA

- Gravel surface
- Native surface

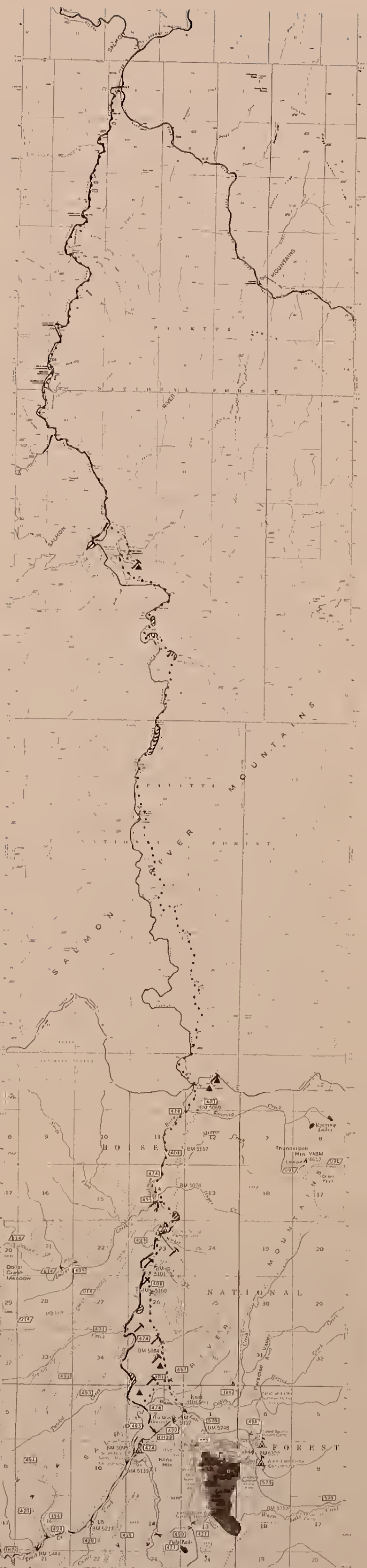


Maps for the Final EIS

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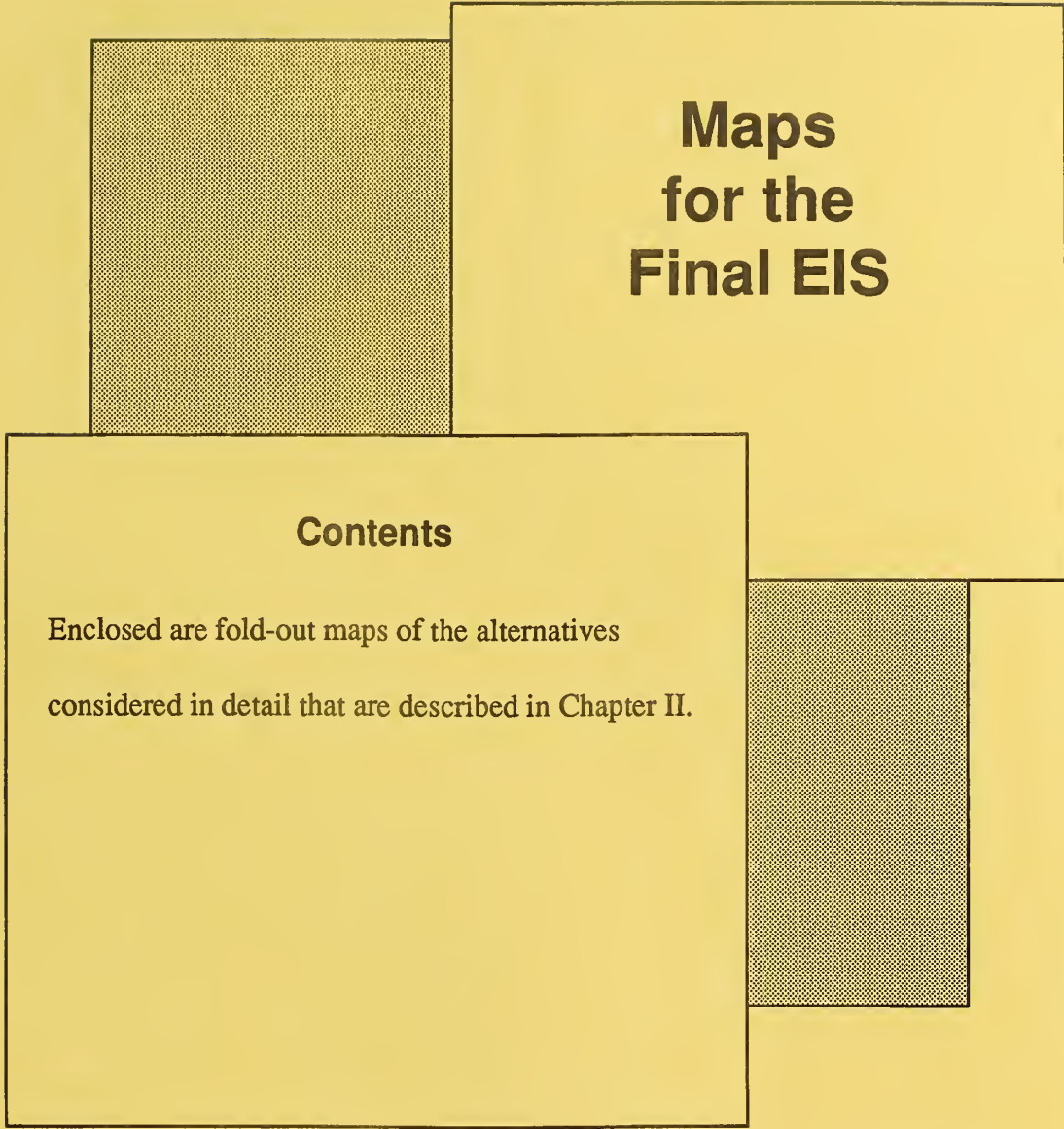
Enclosed are fold-out maps of the alternatives
considered in detail that are described in Chapter II.





Alternative RG

- Gravel surface
- Native surface
- Road converted to trail
- ▲ Gravel and rock pits
- ▭ Major slope treatment area
- ▲ Probable work sites

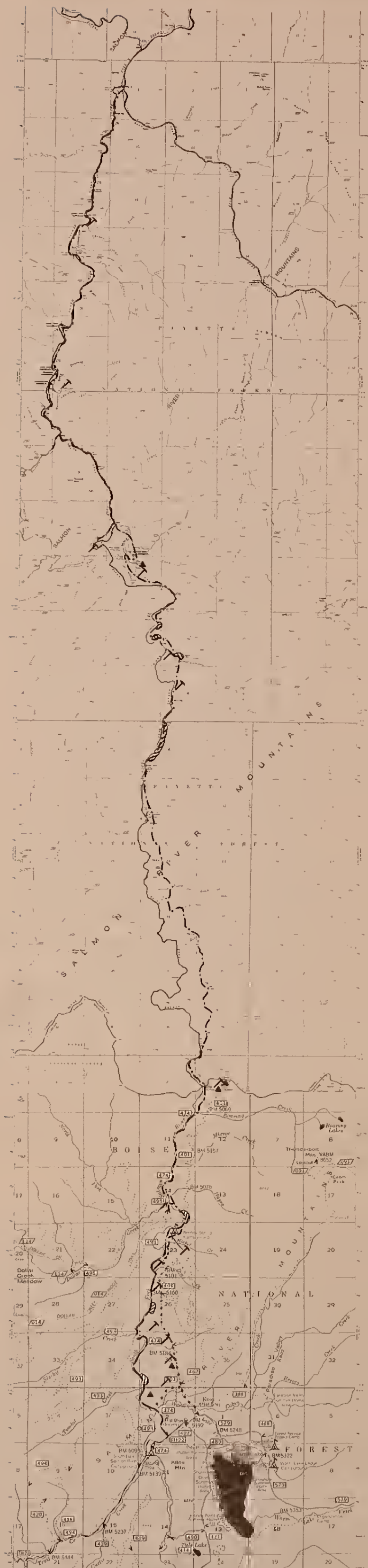


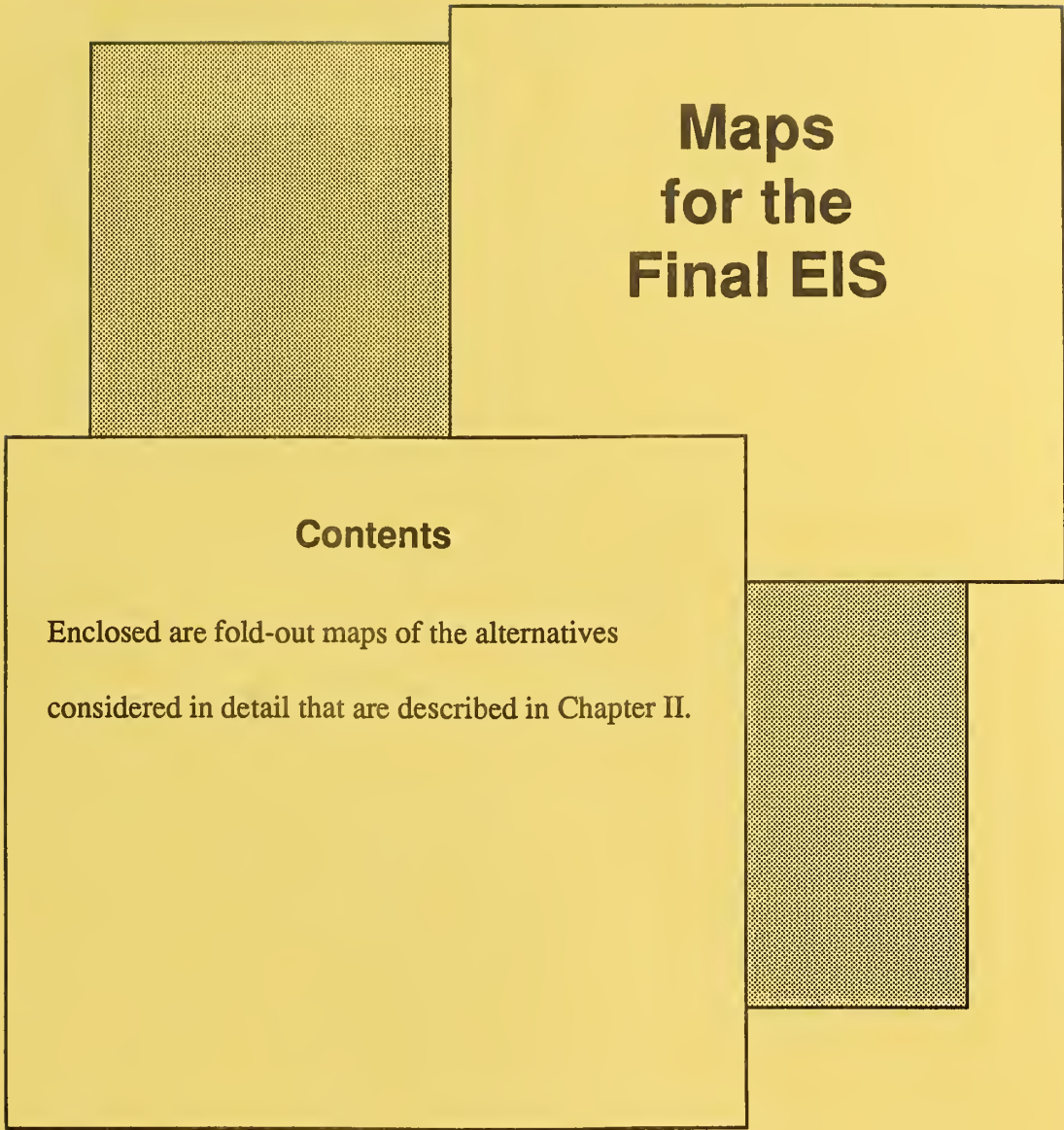
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